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SAC20026203000O

THE AIR FORCE AND STRATEGIC DETERRENCE 1951 - 1960

Department of Energy Declassification Review

1st Review Date: 01-25-06
Authority: DC (DD)
Name: [illegible]

2nd Review Date: 2/1/06
Authority: DD
Name: HR Schmidt

Determination [Circle Number(s)]
1. Classification Retained
2. Classification Changed To: FRD
3. Contains No DOE Classified Info
4. Coordinate With:
5. Classification Cancelled
6. Classified Info Bracketed
7. Other (Specify):

* * *

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[redacted]

THE AIR FORCE AND STRATEGIC DETERRENCE

1951 - 1960

by

George F. Lemmer

USAF Historical Division Liaison Office

December 1967

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW
1ST REVIEW DATE: 01-30-06 DETERMINATION (CIRCLE NUMBER(S))
AUTHORITY: DC DD 1. CLASSIFICATION RETAINED
NAME: 2. CLASSIFICATION CHANGED TO: FRD
2ND REVIEW DATE: 2/1/06 3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY: 4. COORDINATE WITH
NAME: 5. CLASSIFY AS
6. CLASSIFY PAGES
7. OTHER (SPECIFY)

[redacted]

DS72-8085 A1
A10

FORMERLY RESTRICTED DATA
Unauthorized Disclosure Subject to Administrative and Criminal Sanctions. Handle as Restricted Data in Foreign Dissemination. Section 144.b, Atomic Energy Act of 1954.

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FOREWORD

The Air Force and Strategic Deterrence, 1951-1960, is the second of a series prepared by the USAF Historical Division Liaison Office on the general concepts which have dominated the thinking of U.S. and Air Force strategists since World War II. The earlier work, also prepared by Dr. Lemmer, was titled The Air Force and the Concept of Deterrence, 1945-1950.

This study reviews the major political and technological events of the 1950's -- the Korean war and the development of thermonuclear weapons and intercontinental missiles -- and their impact on political and military strategic concepts. The author examines the "New Look" of the Eisenhower administration and the conflicting interpretations of deterrence which arose during the decade.

Max Rosenberg

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I. IMPACT OF THE KOREAN WAR AND SOVIET THREATS

Although the United States emerged from World War II with great military and political prestige, only a few years later it found itself less secure militarily than at any time since 1815. The two great ocean barriers no longer guaranteed it from attack, as they had for more than a century. This dangerous prospect was clearly revealed by the Russians' acquisition of nuclear weapons, beginning in 1949, and the outbreak of the Korean war in 1950. As a result, the United States reversed its long-standing policies and began building a large, permanent, and expensive military establishment.

The principal threat came from the Soviet Union. In addition to its formidable land armies, which confronted the exhausted countries of western Europe, Moscow had acquired atomic weapons with which it might strike the United States itself. To ward off such a calamitous event, the nation might have chosen to appease the Russians and return to its traditional isolationism or to launch a preventive war. Instead of these extremes, it decided to seek security through containment of the Soviet Union and preventing Communist aggression. This middle approach demanded skillful diplomacy, large-scale rearmament, economic and military aid to allies, and collective security arrangements such as the North Atlantic Treaty Organization (NATO).[1]

Militarily, the United States adopted the concept of strategic nuclear deterrence. This required a peacetime military effort much greater than had ever been attempted before plus continuing innovations of new strategic programs to meet changes in the military threat. The goal of deterrence, of course, was to discourage potentially aggressive states from taking steps that might bring on a new world war. Its success depended upon the clear communication of U.S. intentions to the Soviet

Union and on the size and nature of American military forces.[2]

By the late 1950's the cost of these forces had stabilized at about $40 billion--approximately 10 percent of the gross national product. This investment supported strategic deterrence, continental defense, and some elements for limited wars. Through most of the 1950's the U.S. emphasis was on building up the bomber and missile forces of the Strategic Air Command (SAC). The military policy of strategic deterrence appears to have succeeded. Although the cold war remained grim, the Soviet Union was very careful to avoid actions which might lead to a direct military confrontation with the United States and a third world war.[3]

Before the end of the Korean war, which Moscow had initiated through its proxies, the North Koreans, the Air Force had concluded that readiness -- combat-ready forces in being -- was more important than a mobilization base and the ability to raise large forces after a conflict started. This view, expressed clearly as early as 1949 by Gen. Carl A. Spaatz, Chief of Staff, USAF, became commonplace as the cold war intensified. By 1955 the primary components of the U.S. military system were: (1) a massive retaliatory force to deter major Soviet aggression, (2) continental defense forces to protect the deterrent force and minimize damage to the country if deterrence failed, (3) European defense forces, U.S. and allied, to deter or defeat limited attacks on western Europe, and (4) U.S. and allied forces to deter or quickly suppress small-scale aggressions that threatened American and allied interests in what Secretary of the Air Force Thomas K. Finletter had called the "gray areas" of the world. The usefulness of these forces, and the credibility of U.S. military policy, depended on their readiness for action.[4]

Rearmament

Even before the Russians detonated their first atomic device in August

1949 or the outbreak of the Korean war, the nation's concern over the recalcitrant behavior of the Soviet Union and the Communist advances in Europe and Asia had sparked a movement to expand American military forces. The initiative came from the State Department Policy Planning Staff, which in the summer of 1949, after having been briefed by the Joint Chiefs of Staff (JCS), undertook a strategic reassessment of the nation's security. By the summer of 1950 the National Security Council (NSC) had concluded that the Soviet Union's possession of atomic weapons, as well as an overwhelming superiority of ground forces, might swing the balance of military power dangerously against the United States. NSC recommended a large-scale expansion of the U.S. nuclear deterrent, continental defense, and ground forces for Europe. Earlier in January 1950, President Harry S. Truman, in response to the Soviet atomic explosion, approved development of thermonuclear (TN) weapons, but he remained reluctant to impose on the country the burdens of a large-scale military buildup. As he later stated, it was the Soviet-abetted aggression against South Korea that decided the issue. Thus the need to deter the Soviet Union from an attack on Western Europe and the United States and the requirements of the war in Korea led to a large rearmament effort.[5]

[redacted] Since the NSC and JCS assumed that by 1954 the Soviet Union would be able to launch a devastating atomic attack on the United States, the nation's military leaders undertook to create a force that could deter Moscow from initiating general war and perhaps buy enough time to permit a mellowing of the Soviet regime. As worked out by mid-1952, the rearmament goals agreed upon by the JCS included 20 Army divisions, three Marine divisions and three Marine Air wings, 409 major combat ships for the Navy, and 143 wings for the Air Force. Although war in 1954 was not assumed, that year was still considered the period

of greatest danger. The JCS believed that the 143-wing air force could be built by 1 July 1954. As it turned out, both the force goals and the anticipated time of greatest danger were revised frequently before 1960, but they formed a bench mark from which to view U.S. military planning during the ensuing years.[6]

USAF leaders criticized much of the policy adopted before 1954 because they believed that insufficient emphasis was being placed on air power and that too much was going to large ground forces. Since shortages were bound to develop in manpower, materiel, and productive capacity, they declared, the nation should set up a system of priorities. Not unnaturally, they thought first priority belonged to strategic air power. General Spaatz deplored sending large ground forces to Europe, calling this a "wall of flesh" strategy. He feared that the United States might lose the first and crucial battle in any war with the Soviet Union -- the battle for control of the air.[7]

Rising Fear of Soviet Russia

During late 1950 and 1951 both military and civilian leaders in Washington believed that the Korean war might be a ruse to distract the United States and cause it to neglect defense of Moscow's real target -- western Europe. Within military circles -- JCS and the Office of the Secretary of Defense (OSD) -- the feeling prevailed that general war with the Soviet Union was almost inevitable and might be imminent. The Korean war demonstrated, they believed, the Russians' willingness to employ war as an instrument of national policy. And by 1954 -- some said 1952 -- the Soviet Union would be able to devastate the United States with atomic bombs. Many national leaders also believed that limited wars had become abnormal, and that Korea might be the last such conflict. Therefore, the United States could not permit its involvement in the Korean war to divert if from preparing to deter or fight a general war with the Soviet Union. The

British reached a similar conclusion. On a visit to Washington in July 1952, Air Chief Marshall Sir John Slessor argued against depending on large conventional forces to protect western Europe and in favor of a policy of nuclear deterrence.[8]

[redacted] Whatever the opinions on how to avert general war, the Soviet threat to U.S. security seemed very real and terrifying to both military and civilian leaders. In 1950-51 the USAF Directorate of Intelligence estimated that by mid-1952 Moscow would have bombers with an effective range of 2,600 miles; by 1954, their range would exceed 3,500 miles; and by mid-1956, 3,500 to 4,000 miles. By mid-1956 they would also have subsonic guided missiles that would carry 1-ton warheads 5,000 miles, and shortly thereafter a supersonic missile carrying a 21/2-ton warhead the same distance. In August 1953 the Joint Intelligence Committee (JIC) made a somewhat more modest estimate. JIC doubted that the Russians could devise an operational guided missile by 1957, although they could probably launch a limited number from submarines. JIC did think that by 1957 the Soviet Union could deliver about 550 atomic bombs with an average yield of 80 kilotons (KT) but would probably do so only in desperation or on assurance of overwhelming success. Through careful diplomacy and adequate military preparation, the United States hopefully might prevent either of these situations from arising.[9]

[redacted] Throughout 1951-1953 the threat of clandestine nuclear deployment also created uneasiness among U.S. officials. The Interdepartmental Committee on Internal Security (ICIS) warned that it was possible for Soviet agents to smuggle nuclear devices into American cities or harbors and to fire them by remote control. With eight or 10 such devices so planted, the Kremlin could make exorbitant demands on Washington. Refusal to accede might bring swift, devastating punishment.[10]

[redacted]

[redacted] Secretary Finletter doubtlessly had such facts in mind when in February 1952 he told Congress that the administration's policy of strategic deterrence was the most reasonable one to follow. From behind a protective shield of strategic nuclear air power American statesmen could work for peace. Because he believed the world could not stand another major war, he urged the country to spare no effort to prevent such a catastrophe. A little less than a year later, after leaving office, Mr. Finletter in August 1954 published a book, Power and Policy, in which he expressed fear that the United States was not doing enough. He warned that unless the nation became more concerned, atomic supremacy would pass to the Soviet Union. He believed that Moscow would be able to deliver a surprise knockout blow by about 1956. The Soviet leaders would not strike, however, unless they felt that they could safely survive the inevitable U.S. counterattack. Consequently, the United States, while it still possessed clear atomic superiority, should build an overwhelming strategic nuclear air force -- one that would dissuade Moscow from ever believing that it could benefit from a surprise attack. This, Finletter was convinced, the nation was not doing. Partly because the United States had not previously needed such a force and partly because it did not want to pay the price, Mr. Finletter feared that the nation was not developing military power of sufficient quantity or quality.[11]

[redacted] In some respects, the Joint Strategic Survey Committee (JSSC) [redacted] earlier had reached the same conclusion. In a July 1953 review of the world situation, the committee noted that military force levels were wholly inadequate both in offensive striking power and defense of the United States. In view of the possibility of other conflicts like the Korean war, the risk was acute. Unless this trend could be reversed, by 1954 the Soviet Union would have enough nuclear weapons to inflict critical injury on the United States. By 1956 the damage might be irreparable.[12]

[redacted]

[redacted] The continued rapid growth of Soviet air-atomic power during the 1950's triggered a series of other warnings of possible disaster for the United States. In February 1955 the President's Technological Capabilities Panel, headed by James R. Killian, Jr., issued a report which warned of a prospective Soviet advantage in long-range guided missiles. The Killian report concluded that the decided U.S. advantage in offensive power would probably end some time in 1959. In November 1955 an NSC Planning Board, the Joint Strategic Plans Committee, and the Air Force thought mid-1958 a more realistic date. On several occasions during 1955 and 1956 USAF officials declared that, without much greater U.S. effort, the Soviet Union would achieve a decided advantage in strategic air power by 1959. The Air Force was especially concerned by reports in 1955 that the Soviets possessed strategic bombers comparable to the B-52. These reports were generally confirmed in June 1956 when the USAF Chief of Staff, Gen. Nathan F. Twining, visited Russia.[13]

[redacted] Probably the most frightening conclusions were contained in the Gaither Committee* report, "Deterrence and Survival in the Missile Age", of October 1957. This report, drawn up by prominent scientists and other laymen appointed by President Dwight D. Eisenhower, was never published, but its main conclusions became generally known. The Gaither Committee believed that the United States was in danger of becoming a second-class power and, even if it made strenuous efforts, it could not overcome a Soviet lead in ballistic missiles before 1960, or perhaps 1961. Soviet strategic power was rapidly increasing to a point where it could cripple SAC, while its own [redacted]

* Headed by H. Rowan Gaither, Jr., of the Ford Foundation.

[redacted]

defenses were becoming effective. Possession of these substantial capabilities might lead Moscow to conclude that a surprise attack to knock out the United States would be worth the risk. This possibility had to be considered in light of the recent stress on "preemptive" war appearing in Soviet military writing.

The committee believed that, to avoid such a catastrophe, the United States would have to reduce SAC's vulnerability to insure that it could retaliate with enough power to impose unacceptable losses on the Soviet Union. This would require dispersing SAC planes, instituting an airborne alert, and hardening or mobilizing missile launchers. The Gaither Committee also recommended speedy development of intermediate range ballistic missiles (IRBM's) and intercontinental missiles (ICBM's), improvement of warning and defense systems, building stronger conventional limited war forces, spending more money on research and development, and increasing expenditures for civil defense.[14]

(Congressional warnings of U.S. vulnerability differed only marginally from those discussed above. For example, in 1955 and 1956 Senator W. Stuart Symington of Missouri charged that the Eisenhower administration was permitting the Soviet Union to forge ahead of the United States in both long-range bombers and modern intercontinental missiles. Later, in 1958 and 1959 many people, including administration officials, believed that the Russians had a lead in long-range guided missiles or at least the capacity to go ahead. Military, political, and scientific critics of defense policy predicted the so-called "missile gap" would occur in the early 1960's.[15]

The Air Force supported the conclusions of such groups as the Killian and Gaither committees, declaring that they generally agreed with the USAF position on national defense policy. USAF leaders were reassured to learn

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that their plans and programs paralleled the thinking and recommendations of the nation's most eminent scientists. The remarks of then Maj. Gen. Bernard A. Schriever, Commander of the Air Force Ballistic Missiles Division which developed the ICBM, reflected the USAF position. In April 1959 he told the Senate Committee on Aeronautical and Space Sciences that the advent of ballistic missiles made a massive sneak attack more attractive then ever to an aggressor. The advantages of striking first were so great that not only national security but national survival might be at stake. Because of its desire for peace and moral consideration, he said, the United States had given any aggressive enemy the initiative by deciding it would never strike first. Consequently, in the missile and space age, the threat to national survival was perhaps the gravest in "our short history as a nation." [16]

[redacted]

II. THE SIGNIFICANCE OF NEW WEAPONS

[redacted] To understand clearly the dangers threatening the world at the end of the 1950's and why informed people viewed developments with growing alarm, it is necessary to review briefly the rapidly accelerating increase in lethality of weapons -- particularly nuclear weapons. So revolutionary were the advances in weapon technology between 1950 and 1955, made both by the United States and the Soviet Union, that they changed the essential nature of general war and threatened the very survival of great nations. In 1945 at Hiroshima it became clear that one bomb dropped by a single plane had done more damage than the 500-plane raids of World War II. By 1956 nuclear technology had proceeded at such a pace that one plane, dropping one large-yield TN bomb, would set off a blast of greater power than that of all bombs dropped during World War II.[1]

[redacted] The successful completion of the atomic bomb project in 1945 inaugurated a decade of great accomplishments which after 1951 led to development of the thermonuclear or hydrogen bomb and the acquisition of a substantial number of weapons in various sizes, shapes, weights, and yields. By 1955-56 there were two families of weapons with yields that varied from fractions of kilotons to multiples of megatons. Proof and diagnostic testing conducted by the Atomic Energy Commission (AEC) at Bikini, Eniwetok, and the Nevada Proving Ground determined whether weapons or their parts would function as designed. The AEC also sought in these tests to establish new principles of nuclear physics that might be applicable to the fabrication of more effective weapons. An extremely important technical breakthrough occurred between 1951 and 1953 when AEC's Los Alamos laboratory developed

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hydride or so-called boosted bombs, making it possible for a smaller amount of fissionable material to produce high yield. This eventually led to development of small nuclear bombs for tactical use and finally nuclear warheads for missiles. [2]

Thermonuclear Weapons

[redacted] Boosted bombs had to be coupled with TN materials, however, to obtain the colossal power achieved before the end of the decade. After President Truman's decision on 31 January 1950 to develop the "Super", Los Alamos scientists and engineers engaged in many months of ceaseless effort before producing a bomb that could be readily air-delivered. On 9 May 1951 at Eniwetok, AEC exploded a device of 214 kilotons (KT's), * which proved the feasibility of a TN bomb when fired by a fission detonation. At Bikini on 1 November 1952 a TN device of 12 megatons (MT's) was fired by an improved method, but this was not an easily deliverable weapon. + It was not until 1 March 1954 during Operation Castle that a test shot established the practicability of hydrogen bombs. [3]

[redacted] Development of TN weapons might have advanced more rapidly had the military made it a high-priority project before 1950. As it was, the initiative came from such scientists as Louis Alvarez, Ernest O. Lawrence, and Edward Teller and from Congress' Joint Committee on Atomic Energy, the President, and a Long Range Objective Panel of the Research and Development Board. Although USAF Chief of Staff Hoyt S. Vandenberg urged development as early as October 1949, the JCS was divided and offered little guidance before 1953. [4]

* The Hiroshima bomb had been about 20 KT.

\+ The Soviet Union exploded a TN bomb in August 1953.

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[redacted] The very successful Operation Castle of March 1954 foreshadowed a complete revamping of the national nuclear stockpile. Its most important aspect was to determine whether TN weapons of conveniently usable size were feasible. The first Castle shot on 1 March was expected to yield 5 MT, but it actually yielded 15 MT. It produced a fireball 3.5 miles in radius, vaporized its metal tower and concrete substructure, and sent approximately 300,000 tons of sand and coral up with the atomic cloud, which penetrated the tropopause to an altitude of about 100,000 feet. So serious was radioactive contamination that several atolls around Bikini had to be evacuated. Twenty-three crew members of the Japanese fishing vessel Fukuryu Maru, cruising just outside the announced 80-mile danger zone, fell ill with radiation sickness. Altogether, about 7,000 square miles of territory downwind from the blast had been contaminated by the residual fallout of the Castle cloud. There had been evidence of residual fallout before, but it took this shot to demonstrate the real hazards of radioactive contamination.[5]

[redacted] Meanwhile the Air Force and the RAND Corporation had been examining the proposition that TN weapons, if they could be perfected, would rule out future conventional ground warfare. In April 1952 the Air Force Council decided to push for development of TN weapons of the maximum yield that could be delivered by the B-36, B-47, and B-52 and prepare the Air Force to use them as soon as possible. In addition, USAF planners undertook to determine the number and yield of weapons required for an offensive beginning on 1 July 1955.[6]

[redacted] In April 1953 a Joint Advanced Study Committee prepared a paper on national security and military strategy which stated that the world was approaching an era of nuclear plenty and that nuclear energy would rapidly accelerate changes in military strategy and tactics. The United States would have to

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acquire a wide variety of nuclear weapons and use them to strengthen the will of the western powers to withstand Soviet aggression. Although many USAF planners initially were doubtful about the progress in nuclear development, the March 1954 tests convinced skeptics that TN weapons were practical. The years that followed witnessed truly revolutionary developments in nuclear weapons. By early 1956 it was possible to fabricate TN weapons smaller than anything conceived two years earlier. AEC laboratories anticipated they could soon achieve a marked decrease in weight and marked increases in yield in [redacted] four classes of TN weapons. For example, AEC predicted that a new Class A weapon would be built that would weigh not 50,000 pounds, as had its predecessor, but 25,000 pounds, and its yield would be 60 MT rather than the earlier 20 MT.[7]

[redacted] For those who had been startled by the destructive power of the 20 KT bombs of 1945 and 1946, it must have been horrifying even to contemplate the possibility of a 60 MT weapon. Yet in early 1957 AEC laboratories indicated that such a bomb might be devised in the not distant future. And in March 1958 the USAF Chief of Staff asked for a study of the feasibility of employing a weapon with a yield of 100 to 1,000 MT. The Air Staff concluded that it might be feasible but not desirable to use a 1,000-MT weapon. Since lethal radioactivity might not be contained within the confines of an enemy state and since it might be impractical even to test such a weapon, the Air Force Council decided in April 1959 to postpone establishing a position on the issue.[8]

Influence of Small Nuclear Weapons

[redacted] During the early 1950's the idea of equipping fighter-bombers to drop atomic weapons against purely tactical targets came to be accepted. The Navy

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and the Air Force expressed interest, the Army shortly demanded atomic warheads for its artillery, and soon thereafter all the services wanted them for missiles. By early 1952, AEC had developed an atomic bomb weighing approximately 1,700 pounds, to be employed by such fighter aircraft as the F-84 and some Navy carrier planes. At the end of 1952 an improved version was available measuring 155 inches long and 12.2 inches in diameter, and weighing only 1,000 pounds.[9]

[redacted] The Air Force, it should be noted, was slower than the other services in seeing the value of tactical nuclear weapons. Army leaders, including Generals Omar Bradley and J. Lawton Collins, thought tactical atomic bombs put the practicability of defending western Europe in a much more favorable light and might spell the end of large troop concentrations. The Air Force's hesitation resulted from its devotion to the concept of strategic bombing, its belief in the application of maximum military power to important targets, and its desire to retain a monopoly of nuclear weapons. But in challenging the Army's proposal to develop atomic artillery, the Air Force found itself arguing contradictorily that tactical fighter bombers -- using the new low-altitude bombing system (LABS) -- could achieve accuracy equal to that of artillery. Fighters would also be less costly, far more versatile, and less vulnerable. Through 1953, no phase of the atomic energy program caused greater dissension among the services than the question of developing low-yield, inefficient nuclear weapons. These appealed especially to the Army, Navy, and Marine Corps, because they considered atomic weapons improved versions of high explosive (HE) weapons and wanted them for a wide range of tactical purposes.[10]

[redacted] The Air Force was bound to lose this argument, particularly in view of the impressive array of atomic weapons fabricated by the AEC. With Los Alamos

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developing new compact types at a rapid rate, the advent of small atomic weapons was expected to increase operational capabilities of all three services. Tactical atomic capability came to be looked on even by the Air Force as the natural armament of numerically inferior but technologically superior nations and as a natural answer to the problem of the armed hostility of the Communist powers. Between May 1951 and July 1953 the Air Force moved rapidly to build a tactical atomic force, and veteran tactical commanders like Generals John K. Cannon and Otto P. Weyland were enthusiastic about the revival of tactical air warfare. By July 1952 a composite atomic air squadron (49th Air Division) had been dispatched to Europe and in September 1953 another was deployed to the Far East.

The thermonuclear revolution during 1954-56 changed the picture again, making it clear that high-yield weapons could be used by tactical aircraft. As early as April 1953 the Air Force began to study the maximum yield that could safely be delivered by fighters such as the F-84 and the F-101. It concluded that a bomb of 300 to 1,000 KT was feasible. By April 1955 a tactical bomb was being considered that would have a yield of 1 MT. These plans demonstrated how far nuclear bomb technology had advanced since 1950. Indeed, by this time the old distinction between tactical and strategic weapons was fast disappearing and even the differences between tactical and strategic air forces were being questioned.[11]

Improvement of Delivery Systems

It was not until the early 1950's that the Air Force was provided the resources to expand and modernize its strategic bomber forces. Prior to this time the strategic force consisted of World War II B-29's, the B-50 (an improved version of the B-29), and the B-36, which entered combat units in 1948 and provided the range that air leaders had been dreaming about for a generation. Then in late

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1951 the first all-jet B-47's arrived. These six-engine, medium bombers had about the same combat radius as the B-29 but in every other respect exceeded the performance of the other bombers. By 1953 the B-47's had begun to replace the B-29's and B-50's. All the B-29's were withdrawn from the operational force by the end of 1954 and the B-50's by mid-1955. In 1955 the new all-jet B-52 heavy bomber began to enter the SAC inventory. The last B-36, which was superseded by the B-52, rolled off the production lines in August 1954. Reconnaissance versions of the jet bombers also gradually replaced the RB-50's and RB-36's. In November 1956 the Air Force flew its first supersonic bomber, the B-58. Although limited in range, this plane was considered invaluable for certain missions requiring great speed.[12]

[redacted]The most important factor affecting strategic bombardment had always been range -- specifically combat radius -- the maximum distance a plane could fly to the target and deliver its bombs. None of the Air Force's bombers could reach all the potential targets in the Soviet Union from the United States and return without refueling. One obvious solution was to obtain oversea bases. From 1948 onward the Air Force used bases in England, the Far East, and Alaska. However, these were either too distant from important targets or dangerously vulnerable to enemy attack. After 1950, by agreements with foreign governments, the United States built great base complexes in French Morocco and Spain, and in the polar region at Thule, Greenland. Strategic bomber squadrons were not permanently stationed at these oversea bases, but with the use of housekeeping units to maintain and service the aircraft, they could serve as staging stations between home bases in the United States and target areas.

[redacted]Oversea bases, however, remained highly vulnerable to Soviet attack. In addition, their continued accessibility depended upon the policies of foreign

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countries, some of which feared to become too closely involved in the cold war. In November 1955, Gen. Curtis E. LeMay, Commander-in-Chief, SAC, expressed doubt that the United States could long hold enough of these installations to support the strategic strike force. He believed that after 1960 the Air Force would have to plan to launch its strikes from the United States and Canada. Although the Air Force would continue to need oversea bases to provide a margin of safety and complicate the enemy's targeting problems, after April 1956 its strategic strike plans reflected primary reliance on intercontinental operations.

[redacted] To a great extent the Air Force was able to free itself from dependence on oversea bases by vast improvement of a technique it had developed in the 1920's -- aerial refueling. After 1950, when Boeing Company developed the highly flexible flying boom refueling system, SAC greatly expanded its aerial refueling operations. First using modified B-29's as tankers, then KC-97's, anf finally the KC-135, a tanker version of the Boeing 707, the bomber fleets developed the ability to fly anywhere in the world. The KC-135, which entered the inventory in 1957, brought an especially significant improvement because it was the first tanker that could match the B-47's and B-52's in speed and altitude. Beginning in 1953, jet fighters also gradually extended their long-range flights across both the Atlantic and Pacific by means of aerial refueling.[13]

([redacted] Before the end of the 1950's large bomber formations or individual aircraft could be refueled on schedule, often over mid-ocean. Combat radius of the bombers, especially of the B-47, was steadily increased as a result of modifications, improved operating techniques, and in-flight refueling. By 1956 the B-47 could fly three times its normal radius with two or more en route refuelings, which became a normal part of almost all long flights. SAC planes soon were averaging nearly 3,000 aerial refuelings per week. Throughout the 1950's the

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strategic bombers depended on oversea installations and in-flight refueling to obtain the range they needed to reach targets deep within the Soviet Union. And until effective bombers with a combat radius of 6,000 to 7,000 miles or ICBM's became operational, the USAF nuclear deterrent would depend on these aids.[14]

[redacted] For about a decade after World War II, most USAF strategists had planned to have bomber formations accompanied by fighter escorts to protect them from enemy interceptors. The predominant operational concept envisaged relays of SAC fighters escorting formations of bombers to and from their targets. Before 1960 the Air Force placed into operation a series of excellent jet fighter aircraft -- the F-84, F-86, F-100, F-101, F-104, and finally the F-105, which was just entering combat units by 1960.* But development of improved air defense systems and the growing superiority of jet interceptors over strategic bombers made it apparent that large bomber formations would soon suffer unacceptable combat losses. Moreover, jet fighters lacked the range to provide effective escort for long-range bombers. Consequently, when the older strategic bombers were replaced by the fast jets, SAC devised new tactics for penetrating enemy territory. Henceforth, instead of flying in large formations, B-47's and B-52's would fly singly or in small formations, depending for protection on darkness, bad weather, speed, and evasive tactics. With this change, the plan to use fighter escorts was dropped.[15]

[redacted] Following development of small, powerful nuclear bombs, SAC decided that its fighters should be equipped to use nuclear weapons and employed as a part of the strategic strike force. After 1953 their mission consisted of counter-air operations against air bases and aircraft, attacks against strategic targets, diversionary strikes, and other strikes to supplement attacks by the strategic bombers. For a while the fighters were expected to help defend bomber bases

* In addition there were the interceptors, F-89, F-94, F-102, and F-106.

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overseas, but they came to be looked upon primarily as atomic fighter bombers. By the mid-1950's, however, it became apparent that SAC fighters had no significant or legitimate mission. They could carry atomic weapons, but so could the planes of the Tactical Air Command (TAC) and fighter-bombers in oversea theaters had been doing so since 1952. The consensus within the Air Force was that the fighter-bombers should most appropriately be assigned to TAC and the oversea unified commands. By 1957 SAC had eliminated its fighter force.[16]

[redacted]When in mid-1953 AEC informed the Department of Defense (DOD) of the possibility of developing small TN weapons, the significance of long-range guided missiles assumed new dimensions. If a TN warhead could be married to the intercontinental missile, pinpoint accuracy would become relatively unimportant and a new and awesome strategic weapon would be born. For some time a small group of U.S. military leaders, stimulated by the success of the Germans in developing the V-2 rocket, had tried to push American missile development. Their efforts were initially hampered by diversion of attention to other projects, indecisiveness at higher levels of government, and especially by lack of research and development (R&D) funds. During the mid-1950's, however, the services initiated development of various missile systems including the intercontinental ballistic missile.* By the late summer of 1959 the Air Force had developed and deployed its first operational nuclear-tipped ICBM's at Vandenberg AFB, Calif. Even before their arrival, the offensive capabilities of intercontinental missiles had had a profound impact on military planning and strategic thinking. Still, the Air Force felt that the manned strategic aircraft would and should remain part of the nuclear deterrent force into the forseeable future.[17]

* The Air Force first emphasized aerodynamic or air-breathing missiles, Navaho and Snark, but only the latter was produced in small numbers.

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III. MAJOR ELEMENTS OF USAF STRATEGY

[redacted] During the early 1950's the Air Force developed a broad general war concept which it held more or less consistently throughout the decade. Adequate preparation for waging general war, USAF leaders believed, provided the only workable deterrent and the greatest hope for avoiding war altogether. As nuclear weapons became plentiful and the Soviet Union grew stronger, the Air Force -- and for the most part the national administration -- concluded that the safety and perhaps survival of the United States rested on maintaining an effective and superior strategic deterrent force. Basic to the Air Force's strategy was its conviction that the decisive phase of any large or general war would occur during the initial nuclear exchange when victory would be won or lost. Consequently, strategic air power held the key to victory in modern warfare.[1]

[redacted] In September-October 1951 -- as truce talks proceeded in Korea -- the Air University and the Directorate of Plans drew up in broad terms a concept of operations to be executed upon the outbreak of general war. Approved by the Chief of Staff in October, this plan called for an immediate air offensive against the war-making and war-sustaining capabilities of the Soviet Union. Simultaneously, the United States would undertake active theater campaigns to protect such vital areas as western Europe, Japan and its environs, and the Middle East. During subsequent years the Air Force further developed and refined this concept as it attempted to iron out policy differences with the other military services. The basic issues concerned funding and operational priorities. USAF strategists insisted that first priority should be given to strengthening the Strategic Air Command and that the operational goal should be to strike at the heart of the Soviet Union.[2]

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In this connection, a 1953 SAC emergency war plan projected an air offensive against Russia by six heavy bomber wings from the United States, 14 medium wings from the United Kingdom (U.K.), six from Africa, two from the Far East, and one from Alaska. Nuclear attacks would be launched against about 500 industrial targets. Others would be aimed at suppressing enemy nuclear strikes against the United States and to slow or halt the movement of Soviet ground forces. The U.S. offensive would be launched with four main strikes and tactics would vary according to the depth of penetration, season of the year, and resistance encountered. The SAC bombers would penetrate enemy territory at low altitude to avoid early-warning radar, then rise to 30,000 feet for the final approach to their targets. After dropping their bombs, they would head for home at maximum speed by the shortest routes. Many would land at allied bases, however. During this initial phase, the Air Force expected maximum losses of about 25 percent of the striking force.[3]

This operational plan was modified in the mid-1950's as nuclear weapons became more plentiful, inflight refueling improved, and improved aircraft entered the strategic force. Later, when Moscow embarked on a program to build a formidable strategic nuclear air force of its own and improved Soviet air defenses, USAF targeting plans were further revised. After 1955 SAC emphasized striking the enemy's strategic forces rather than industrial targets since the destruction of the latter would have little immediate effect on Moscow's ability to severely damage the United States during a nuclear exchange.[4]

The Air Force's viewpoint was publicly enuciated several years before by General Vandenberg during a June 1953 appearance before a Senate committee. He stated that a country like the United States could not depend on final or positive war plans because it had determined not to strike first. While it would fight if it or its allies were attacked, the nation could not be certain how or where the

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enemy's blows might fall. Consequently, USAF plans provided for certain military actions to be taken after a Soviet strike. Unlike some of his colleagues, General Vandenberg stressed the importance of strong air defenses and tactical air units. The first would provide some protection to the nation and the strategic deterrent force and the second would undertake to sap the power of Soviet armies invading Europe by attacking their lines of communication and destroying their supply bases. In general, however, the Chief of Staff believed that so long as war threatened, the United States would have to put its faith in its ability to counterattack. The Strategic Air Command would have to be strengthened and maintained in an alert posture in the hope this would deter aggression. If deterrence failed, then SAC would have to quickly destroy the enemy's power to make war.[5]

[redacted] The official USAF position on national defense policy, as set forth in October 1953 by Maj. Gen. Robert M. Lee, Director of Plans, was based on the following factors and beliefs: (1) nuclear weapons had assumed revolutionary and decisive importance; (2) the major threat to U.S. security came from the Soviet Union; (3) offensive military forces in being constituted the major deterrent to aggression and should have first priority on defense resources; (4) the United States should wage a more aggressive cold war and not engage in peripheral wars unless limitations on the use of weapons were removed; (5) the nation should maintain an offensive force capable of destroying the enemy's air forces on their bases and a continental defense able to thwart a decisive attack on the United States; and (6) U.S. foreign aid should go to countries in western Europe and Japan, with Italy, Greece, Turkey, and Yugoslavia being given secondary consideration. Also, the United States should protect Formosa and prevent Southeast Asia from being overrun by the Communists. In addition, the

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western powers would have to accept responsibility for the defense of the Middle East because of the oil and bases there, and they should seek to create economic and political stability in the area.[6]

[redacted] In the decade after 1955, the Air Force assumed that in any large war, TN weapons would be used to a maximum extent, which might permit reduction in some military forces. However, it recognized that there would likely be localized conflicts and that the Air Force would have to fight both general and limited wars. General war would require it to launch the strategic air offensive, provide air defense for the United States, and defend western Europe and other areas vital to the safety of the free world -- all at the same time.[7]

[redacted] The USAF plan for a strategic offensive depended increasingly upon high-yield nuclear weapons -- fission and thermonuclear -- tailored to the big bomber and, later, the intercontinental missile. From December 1952 onward the Air Force argued that more powerful weapons were required than before because the type of buildings in eastern Europe and the Soviet Union would be much more blast-resistant than the structures destroyed by the Hiroshima and Nagasaki bombs. Subsequently, steps were taken to provide higher yield weapons, and USAF leaders expressed the conviction that their strategy would be successful in the next war and that their national defense views could not seriously be challenged. They urged the administration to move as rapidly as possible to replace the low yield, inefficient atomic weapons with the more powerful TN weapons. In this connection, they pointed out that the strategic requirement for bombs through 1956 would exceed the supply. Since strategic needs were more important than tactical requirements, the Air Force should have first claim on nuclear weapons and funds to develop advanced delivery systems.[8]

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Conflict with the Army and Navy

[redacted] The above views not unexpectedly aroused the Army and Navy and set off a doctrinal dispute during the early 1950's. The other services flatly denied that strategic air power alone could insure victory. While they generally agreed that Soviet aggression presented the greatest threat to U.S. security and that an armed clash with the Russians would probably lead to total war, they argued that the conflict would be much more complex than the Air Force expected and that no single kind of military force could decide the issue. The Army held that the initial air exchange would be inconclusive and that victory would not be assured until U.S. and allied surface forces had defeated the enemy's surface forces, seized bases close to his home territory, and perhaps occupied at least a part of it. Final defeat of the enemy, the Army argued, would have to be administered by land forces. The Navy also doubted that the initial air offensive would be decisive and for the nation to depend upon it would be bad policy.[9]

[redacted] Since the Air Force continued to press its views on the overwhelming importance and needs of the strategic air offensive, disagreements arose repeatedly over the various assessments of what future wars would be like, methods of weapon delivery, and the nature of targets to be destroyed. The Army and Navy advocated that large numbers of small nuclear weapons be provided for use against specific tactical targets. The Army was particularly interested in development of nuclear warheads for artillery and short-range missiles and stressed the virtue of accuracy, while the Navy recommended more nuclear bombs for carrier-based aircraft. Both services strongly opposed development of a large number of TN weapons since this would limit the number of tactical fission weapons. The Air Force did not object to small atomic weapons per se, which it admitted might be needed to destroy such targets as underground installations or dams. But it

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argued that since there would likely be an overall shortage of nuclear materials through 1955 and possibly 1956, each inefficient weapon produced would increase the deficit. Consequently, small atomic weapons should have a distinctly secondary place in the stockpile, at least through 1955.[10] [redacted]

[redacted] The Air Force's ideas concerning the nature of war and modern strategy caused it to question JCS operational plans for western Europe. In September 1952, for example, the USAF Chief of Staff objected to the majority plan which called for checking a Soviet land assault on Europe and then counterattacking with "balanced" air, ground, and naval forces. General Vandenberg argued that, if sufficient nuclear air power were made available at the outset and protected from the initial enemy assault, the air offensive would be decisive and large balanced forces unnecessary. The USAF assumption was that with the outbreak of war the United States would launch its atomic offensive and sustain it until the Soviet Union capitulated. Both strategic and tactical nuclear weapons would be used with the targets stretching from the battle line all the way back to the enemy's heartland. *

[redacted] The Air Force also continued to emphasize that maintenance of a powerful nuclear striking force able to inflict vast devastation on vital enemy targets provided the main deterrent to Soviet aggression and war. The Air Force also pointed out that during peacetime it probably would not be economically and politically feasible for the western powers to maintain adequate balanced forces. Therefore, to avoid the dangers of economic collapse or political upheavals, the Allies should emphasize vital military forces -- chiefly nuclear air -- and deemphasize ground and naval units. The Air Force supported

* In December 1954 NATO agreed to strike with nuclear weapons, tactical and strategic, at the outset of Soviet aggression.

the NATO plan of trying to hold the Rhine-Ijssel river line but remained convinced that proper use of strategic air power would quickly achieve decisive results without major land campaigns.[11]

(U) Within the JCS the contradictory viewpoints of the services sometimes resulted in serious delays in completing plans. In October and November 1954 the JCS became enmeshed in a typical dispute while considering a joint war plan for 1957. The Army and Navy emphasized the importance of maintaining a mobilization base and rapidly increasing forces after a war began. The Air Force held that the growing number and destructiveness of nuclear weapons and improved methods of delivering them made the initial atomic phase of any future war the primary consideration. It did not believe there could be a "World War II type" conflict following the nuclear phase. It argued that the art of warfare was being fundamentally reoriented and that planning efforts should concentrate on the first stage of a conflict during which each side would attempt to deliver massive firepower. The D-day force -- which should be given priority -- would decide the issue.[12] *

(U) In the spring of 1956 these continuing divergent views on general war strategy delayed completion of the Joint Strategic Capabilities Plan (JSCP). The previous August the JCS had adopted a plan so susceptible to differing interpretations that two plans emerged: one assumed the use of nuclear weapons at the outset and one would have delayed their use indefinitely. The Air Force thought the latter implied a "march to Moscow" strategy. It conceded the possibility that war between the United States and the Soviet Union might not start as a

* The Secretary of Defense, in a sort of compromise decision, for planning purposes permitted the services to use those forces they could have ready within six months after the start of mobilization.

general, total war. It might begin with a series of conventional actions and counter actions that neither side intended to lead to general war. However, the Air Force believed that such a conflict could not long continue without escalating into all-out nuclear war.

[redacted] Even after the Joint Logistics Plans Committee (JLPC) declared that a general conventional war could not be supported logistically, the Army continued to argue that nuclear weapons might not be used. When the Air Force's dissent came to the attention of Adm. Arthur W. Radford, chairman of the JCS, he objected to dual plans and dual strategies. Since the disagreements over strategy continued, the matter was referred to President Eisenhower. He ruled that nuclear weapons would be used from the outset of a general war. Subsequently, both the JSCP and the Joint Strategic Objectives Plan (JSOP) were revised to reflect this important decision and the conventional war strategy was dropped. The JCS approved the plans on 27 June 1956.[13]

[redacted] In March 1957 the Army and Navy again objected to USAF strategic air concepts. Specifically, they questioned the need for large numbers of high-yield nuclear weapons, complaining about what they called "overbombing" and "overdestruction". A related term, "overkill ", came into popular usage several years later when Gen. Maxwell D. Taylor, Army Chief of Staff, told the House of Representatives in January 1959 that the nation had enough nuclear weapons in its strategic force to annihilate the enemy some 10 times over. The Air Force retorted that this assumed the use of all available bombs, whereas actually no more would be used than necessary. The surplus constituted a margin of saftey; more might be needed than could be anticipated and many might be destroyed or made inaccessible by a surprise Soviet attack.[14]

These arguments, growing out of fundamental disagreements over basic military policy, continued. During October-December 1959 another dispute arose when the services began drafting a Joint Strategic Objectives Plan for 1963. The Army and Navy again advocated increasing U.S. preparations for conventional war while the Air Force insisted that the overriding priority must be given to the nuclear retaliatory forces. The Air Force thought only a small investment in special, limited-war forces was necessary.[15]

USAF Misgivings and Fears

During 1958-1960 USAF leaders often argued that time was working against the United States; that it was falling behind in the arms race. In support of these conclusions they cited the relatively fixed defense budgets of the period, rising R&D costs, and growing Soviet missile power. As a consequence, they said, the Air Force would be unable to provide an entirely adequate deterrent. In December 1958, during the fiscal year 1960 budget review, Gen. Thomas D. White, the USAF Chief of Staff, claimed that programmed forces were inadequate in light of the ominous Soviet threat and cited the imminent obsolescence of the B-47 bombers and the lack of modernization programs to offset reductions in overall USAF strength. He also pointed out the need for speedy procurement of KC-135 tankers and the Minuteman ICBM. Two years later General White objected to the overly optimistic assessment of the U.S. defense posture by the JCS. He again held that retaliatory power was dangerously weak and called for a greatly stepped-up program of bomber dispersal and an airborne alert.[16]

Although USAF planners remained dissatisfied with the situation, the fact was that weapons for general war largely dominated national military policy during the late 1950's. The Air Force, which played the predominant role in developing the generally accepted concept of strategic deterrence, became the

natural target for criticism for unwillingness to adjust its strategy and not preparing for limited war. USAF insistence that the strategic deterrent must have overriding priority met increasing resistance toward the end of the decade. The critics included not only the other military services but some agencies within the federal government, civilian commentators on military affairs, and even some officials within the Air Force.[17]

Although General LeMay, who became Vice Chief of Staff in July 1957, continued to insist that the nation could not afford separate weapon systems and strategies for various types of conflict, General Weyland, commander of TAC, believed the Air Force needed larger general purpose forces for limited war. Others pointed out that continental air defense required more resources. With certain reservations, the Secretaries of State and Defense and the President continued to support the strategic air power position. However, the Army's concept, now called "flexible military response", gained wide acceptance in civilian circles. By 1960, although the budget still reflected little change, a trend toward flexible response had begun. Some USAF officials, including even Gen. Thomas S. Power, who had succeeded LeMay at SAC, had become concerned over the possibility that there might be limited wars in which nuclear weapons would not be used.[18]

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IV. THE NEW LOOK AND MASSIVE RETALIATION

The "New Look" and "Massive Retaliation" were twin aspects of the defense policy adopted by the Eisenhower administration. Arising from impatience with high defense budgets and taxes on the one hand and the availability of of powerful nuclear weapons on the other, this policy sought to insure long-term national security without the expensive stops and starts of the past. Its goal, according to a Presidential statement issued in April 1953, was not to tie U.S. strategy to any magical critical year but to base defense policy on "the sounder theory that a very real danger not only exists this year, but may continue to exist for many years to come; that our strength, which is already very real, must now be made stronger, not by inefficient stops and starts, but by steady continuous improvements." With such a forward-looking policy, the administration believed the country could have both a strong economy and strong military forces. This policy seemed to parallel USAF theories on the nature of future wars and quickly gained wide acceptance in the Air Force as well as from the public at large.[1]

However, within a few years, the Soviet Union used the fruits of advanced military technology to increase greatly its striking power and put the Eisenhower policy in doubt. By the end of 1957 critics claimed that the stable military budgetary approach adopted by the administration could not meet the challenge of Soviet progress in nuclear air power, ICBM's, and space exploration. Some argued that, as growing nuclear power on both sides of the Iron Curtain made general war irrational, reliance on one type of weapon or one military strategy could not safeguard the nation. Proponents of massive nuclear power might justly claim that strategic deterrence had worked. But others claimed that

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deterrence of general war made limited local wars more likely, since large nuclear weapons were of questionable value in countering Communist-inspired insurgencies, incursions, or local conflicts. Many military and civilian leaders believed the United States had seriously neglected forces appropriate for countering these threats. However, to finance strategic deterrence, space exploration, and limited war forces to the extent the critics demanded would have increased the budget far beyond what the Eisenhower administration considered economically sound. This was the dilemma facing the government as the decade ended.[2]

The New Look

When the Eisenhower administration took office in January 1953, it pledged economy in government and balanced budgets. To achieve those aims, the new Secretary of Defense, Charles E. Wilson, in February ordered a halt to new and just-started military construction, drastically reduced the last Truman defense budget by about $7.5 billion, and planned a slowdown of various military programs. Despite vigorous protests by General Bradley, chairman of the JCS, and General Vandenberg, Wilson prevailed and the budget reductions finally totaled about $6.8 billion. The Air Force had the most expensive program and suffered the largest initial reduction. As a consequence, it was forced to revise its plans to build a 143-wing force, which General Vandenberg had defended as essential to national security, and establish a new goal of 120 wings.

The following July President Eisenhower assembled his newly appointed military advisers -- Admiral Radford, chairman of the JCS, and Gen. Matthew B. Ridgway of the Army, Adm. Robert B. Carney of the Navy, and General Twining of the Air Force -- and instructed them to take a new look at U.S.

military policy and capabilities. Later, in July, Secretary Wilson called them to a a three-day meeting at Quantico, Va., and then announced that the services would have to get more military strength per dollar expended. At this meeting the Director of the Budget, Joseph Dodge, warned that the fiscal year 1955 budget would have to show further substantial reductions. Less than a month later, on 20 August 1953, the Soviet Union announced that it had exploded a TN bomb.[3]

[redacted] In December 1953 and March 1954 Secretary Wilson and Admiral Radford attempted to further define the New Look. Wilson considered the New Look a natural evolution from the crash programs that followed the outbreak of the Korean war. Also, it was a natural application of "economy in force" which would exploit offensive nuclear air power. He hastened to add, however, that the United States would not rely exclusively on nuclear weapons. In General Twining's view, the New Look constituted a strategy that provided for general war as well as smaller crises, while easing the drain on U.S. manpower, materials, and financial resources.[4]

[redacted] Air leaders in general, although they opposed the cuts in their planned program, were encouraged by announcements that the administration would increasingly emphasize air power in military strategy. An Air Staff study of January 1954 concluded that acquisition of more powerful nuclear weapons would permit some reduction in the strategic force. It was at this time that the Air Force adopted a new force structure goal of 137 wings. Conceding that there was a limit to the amount of money the United States could afford to spend on weapons of war, the Air Force urged a build up of offensive power since no country ever had or could win a power struggle from a "defensive posture."[5]

[redacted] However, by November 1955 USAF planners found themselves squeezed by further administration budget restrictions and it seemed likely they would

have to abandon the 137-wing program. They subsequently lowered their goal to 130 wings by the end of fiscal year 1956 and 128 in 1957. The continuing disparity between the size of forces being planned by the Air Force and the other services and the funds expected to be made available by the administration caused vigorous disputes again in March-July 1956 and intermittently thereafter. In June and July Admiral Radford recommended cutting military manpower from 2.8 million to about two million, reducing ground forces in Europe and Asia, and leaving only small atomic task forces overseas.

[redacted] Admiral Radford believed the presence of U.S. ground troops in Europe and Asia were more a visual than an actual deterrence and could be provided by very small forces. However, protests from the Army and NATO countries forced abandonment of the Radford plan. The government nevertheless remained committed to lowering defense costs, the President, Secretary Wilson, and Admiral Radford arguing that the American people would refuse to accept higher expenditures. In July 1957 they determined that the defense budgets for the years 1959-1961 would be limited to about $38 billion annually. This arbitrary ceiling meant the services would have to drop their expansion plans and slow modernization programs. The Army, hardest hit, would be forced to drop 4 of its 15 divisions and cancel plans to acquire more troop airlift capabilities.[6]

[redacted] Within the Air Force preparations began as early as January 1956 to adjust to the anticipated budget limitations. Headquarters USAF devised a tentative force structure that severely cut into tactical and air defense forces and curtailed planned force modernization. When presented to the commands for comment, this plan aroused a great deal of controversy over division of the limited resources. SAC declared that some resources were being squandered on USAF weapon systems of doubtful capability. General LeMay proposed reducing

air defense and uniting all offensive forces into one, wherein strategic weapons would be increased and tactical weapons gradually deleted. LeMay's proposal would virtually have eliminated the Tactical Air Command. Protesting strongly that it had already been cut too deeply, TAC argued that it was essential to maintain tactical forces for both general and limited war. The Air Defense Command (ADC) thought that under the proposed plan continental air defense would be dangerously inadequate. The Air Research and Development Command (ARDC) and Air Materiel Command foresaw future serious consequences if more money was not allotted in their areas. The cuts in the end did not prove as drastic as the Air Force feared but USAF officials remained concerned about the New Look and declared that any further significant reductions would impair national security.[7]

[redacted] The administration, having committed itself to stringent military budgets, continued to place great emphasis on air power and nuclear weapons. The National Security Council reaffirmed the policy in June 1957. Under this policy, SAC's retaliatory force enjoyed special priorities. Nevertheless, there were some USAF officials who recognized a requirement for conventional combat units. For example, Secretary of the Air Force Donald A. Quarles in June 1957 concluded that general war was becoming less likely and local war more so. His opinion, however, did not make much of an impression on the Air Staff. Indeed, following the Soviet launching of Sputniks I and II in October and November 1957, General White urged accelerated development of ICBM's to counter the growing Soviet threat and the emphasis once more was on massive nuclear power.[8]

[redacted] To some extent, the defense budget in the mid and late 1950's was molded by political struggles between groups who believed the Communist threat was the dominant national issue and others who thought it exaggerated. The absence of

war involving American forces, the fear that an arms race might lead to a conflict, and the desire for lower taxes moderated the drive to increase defense spending. The crises in Indochina, Formosa, Suez, and Hungary in 1954-1956 came and went without causing major wars or changing U.S. defense programs. The Lebanese and Formosan crises of 1958 did, however, delay reductions in the Army and Marine Corps. None of these crises involved U.S. troops in shooting conflicts. This fact, plus the growing belief in some quarters that no great nation would permit a crisis to blossom into general war, contributed to the administration's determination to hold down the military budgets. But unfortunately for President Eisenhower's New Look strategy, the rapid growth of Soviet military capabilities in the late 1950's threatened to invalidate it. With the orbiting of the Russian satellites the demand arose for more, not less, military expenditures to maintain a balance which hopefully would reduce the likelihood of war.[9]

Massive Retaliation

The concept of strategic deterrence, from the time of its promulgation after World War II, was based on the premise that the United States should and would maintain a strike force capable of retaliating with overwhelming power against any aggressor. In January 1948 the President's Air Power Commission, headed by Thomas K. Finletter, had declared that safety for the United States depended upon holding out to any threatening power "the prospect of a counter-attack of utmost violence." Actually, some military leaders deeply concerned by the unprecedented threat to national survival had toyed with the idea of taking preventive or "preemptive" military action under certain circumstances. In July 1947 General LeMay had thought it might become necessary to redefine an aggressive act and authorize quick strikes to prevent a "national Pearl Harbor."

In 1949-50 Maj. Gen. Orvil A. Anderson of the Air War College openly questioned whether preventive war was more immoral than permitting the Soviet Union to acquire the capacity to destroy the free world. And after February 1955 SAC war planners held strong reservations about the assumption that the United States would never strike first in a nuclear war. They feared that the nation could not absorb a first blow and still retaliate decisively. Generally, however, responsible USAF officials, along with most national leaders, rejected preventive war as inconsistent with American principles.[10]

Before 1954 most statements of government officials had left the impression that nuclear retaliation would be resorted to only in response to a major attack on western Europe or North America, and possibly only in case of an attack against the United States itself. This implied that limited, local aggression would be resisted by conventional means, as in Korea. Nevertheless, there was a growing body of opinion within the Air Force and in Republican political circles that limited war was abnormal and reliance on it could exhaust the United States. In December 1952, after visiting Korea, President-elect Eisenhower and John Foster Dulles, who soon after became Secretary of State, both expressed dissatisfaction with the prospect of dissipating U.S. forces in remote, indecisive struggles. Dulles, who doubted that the nation could afford to establish static defense positions all around the Communist perimeter, favored maintaining a strong retaliatory power to strike swiftly at the sources of aggression.[11]

Indeed, in later years President Eisenhower claimed that he had used the threat of nuclear weapons to force the Communists to sign the Korean armistice in July 1953. He also had advised Winston Churchill that if the Communists reopened the war he would feel free to use atomic weapons when and where military advantage dictated. Mr. Eisenhower's view was that inherent in the policy of

massive retaliation was the intention to strike at the heart of Communist power with means of America's own choosing in case of a major attack on the West. He said he would not allow the enemy to blackmail the United States into limiting its weapons and saw no sense in wasting manpower in small wars that could not achieve decisive results.[12]

It was with similar thoughts in mind that USAF officials, beginning at the Air University in February 1953, sought to formulate a theory called "air control" or "air persuasion", whereby overwhelming air power could be used, apparently as a threat, to induce the Russians or Communist Chinese to restrict their imperialistic aims.* In October the Air Staff drafted for the administration's consideration a proposed statement of national policy. Assuming that U.S. military forces were spread too thin and that the free world could best be defended by American resolve to strike hard with offensive air power against an aggressor, the policy statement stressed maintenance of a massive retaliatory capability that could not be neutralized by a Soviet surprise attack. The Air Force believed this provided a means whereby the United States could match Moscow's growing strength and at the same time reduce defense expenditures and conventional forces. The hope was that the Soviets might eventually be persuaded that their own best interests lay in a negotiated settlement with the West. By the end of December 1953 these ideas had been accepted by the administration and incorporated into NSC 162/2.[13]

On 12 January 1954, in a famous address before the Council of Foreign Relations in New York in which he presented an overall view of the administration's national security policy, Secretary Dulles stressed the concept of "instant,

* During the next two years this idea received intermittent consideration in the Air Staff and JCS and was discussed by the National Security Council.

massive retaliation." He said that while local defense would always be important, it alone could not restrain the mighty power of the Communist world. Massive retaliatory power would have to reinforce local defenses. He declared that the free community could best deter aggression by being able and willing to "respond vigorously at places and with means of its own choosing" and he implied that henceforth the President would depend primarily on a great capacity to retaliate instantly. Secretary Dulles doubtless hoped to influence Soviet attitudes at the conference of foreign ministers, which convened later that month in Berlin, and to support the French in their war against Communist Vietminh forces in Indochina.[14]

(U) Not unnaturally most USAF leaders expressed strong approval of Secretary Dulles' position on massive retaliation. General White described it as a policy of realism resulting from the startling advances in modern weapons. He also noted that it was not new but was based on the thoughts of such early advocates of air power as Guilio Douhet, Billy Mitchell, and Orvil Anderson. Brig. Gen. Dale O. Smith of Air University stated in a book published the following year that Dulles' statement represented a confident new step. Air Force magazine said it marked the end of U.S. retreat and indecisiveness in the face of aggressive communism.[15]

[redacted] The pronouncement, however, also aroused severe criticism. Some Democratic opponents of the Eisenhower administration said that reliance on "instant, massive retaliation" meant that when Communists attacked a non-Communist country, the United States would immediately drop nuclear bombs on Moscow and Peking or concede defeat. These and other critics argued that such a policy placed the United States in an inflexible position, would be the wrong use of nuclear weapons, might start a nuclear holocaust, and consequently was

not credible. Even some USAF leaders, mostly in TAC or ADC, questioned whether the policy would ever be carried out. Many people also thought the President would be extremely reluctant to authorize use of nuclear weapons in defense of remote regions not vital to U.S. safety.

[redacted] Although Dulles' statement seemed to outline a new role for strategic air power, it did not, in fact, establish a firm U.S. policy of retaliating with nuclear weapons against aggression in the "gray areas." Actually, within two months administration officials began to hedge. In March and April Admiral Radford and Secretary Dulles denied that the United States intended to rely solely on air power to counter aggression. What Dulles had stressed, they said, was that the United States needed the capacity to retaliate massively where and when it chose.[16]

[redacted] Some critics held that the new interpretation of massive retaliation failed within months after it was enunciated when the Communists forced the French out of Indochina. However, a few observers of the international scene thought the Communists would have taken all of Vietnam but for fear of provoking the United States. Still others, including former Secretary of the Air Force Finletter, attributed the French defeat to the lack of an agreement between the United States, France, Britain, and the countries of Southeast Asia. Secretary Dulles tried to correct this deficiency during September 1954-March 1955 by organizing the Southeast Asia Treaty Organization (SEATO), but criticism of massive retaliation continued. When conventional U.S. forces were deployed to Lebanon and Taiwan during the 1958 crises there, the views of the critics seemed substantiated. However, General White suggested that the Soviet Union and Communist China had been deterred from causing serious trouble in the areas by their fear of American long-range air power, not by battalions,

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ships, or tactical aircraft sent to the scene.[17]

Missiles and Space

[redacted] The development of long-range missiles and space vehicles contributed much to strategic thinking during the 1950's and gave rise to several major controversies. Previously, however, the very idea of nuclear-tipped intercontinental missiles was derided. For example, Vannevar Bush, the eminent wartime head of the Office of Scientific Research and Development, in September 1949 tried to scotch the notion that such missiles could become practicable weapons. He believed guidance would remain unsatisfactory, the nuclear warheads too heavy and unwieldy, and fissionable material too scarce. But within several years of his statement, the Atomic Energy Commission demonstrated that nuclear weapons could be made smaller, lighter, and more powerful. The TN breakthrough of 1953-54 insured weapons with multi-megaton yields and greater radii of destruction, reduced the importance of accurate guidance, and coincided with other technological developments that made long-range missiles feasible.[18]

[redacted] Many military planners realized that the ICBM would have numerous advantages over the bomber. Its sites could be better camouflaged than air bases and a complex of hardened missile sites might be more easily protected than exposed manned bombers. Moreover, there was no known way that the ballistic missile -- travelling at tremendous speed on its incoming course -- could be intercepted. With the perfection of guidance systems, the ICBM could deliver warheads almost as accurately as those dropped by bombers. On the other hand, ICBM's would be of little use against fleeting targets and, in addition, would require substantially improved intelligence on enemy strategic targets.

[redacted] During the 1950's all the services pushed development of a large number of missile systems. The Army specialized in tactical and air defense missiles

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but also made plans to develop and deploy the Jupiter intermediate range ballistic missile. In November 1956, however, Secretary Wilson limited the Army to missiles with a range not exceeding 200 miles and assigned operational control of all land-based IRBM's and ICBM's to the Air Force. In December he authorized the Navy, which had acquired a family of air defense, air-to-air, air-to-ground, and ship-to-shore attack missiles, to develop the solid-propellant Polaris for deployment aboard nuclear-powered submarines.[19]

[redacted] The Air Force's interests included, besides the ICBM and IRBM, air defense and tactical missiles. Its first intercontinental missile was the air-breathing Snark, only a few of which were produced and deployed. Its Atlas ICBM program got priority treatment in early 1954* after Trevor Gardner, Assistant Secretary of the Air Force for Research and Development, created a Strategic Missiles Evaluation Committee headed by Dr. John von Neuman of Princeton University. In February 1954 the von Neuman committee recommended that Atlas be put on an accelerated basis to take advantage of TN warheads and that a separate division with full authority over ballistic missile projects be established within ARDC. The Chief of Staff and Secretary of the Air Force approved in March and in July ARDC established the Western Development Division (WDD) at Inglewood, Calif., under General Schriever. The Air Force also initiated work on a back-up ICBM, the Titan, and then followed in late 1955 with the development of the Thor intermediate range ballistic missile. Finally, in 1957, the Air Force felt that technology had advanced sufficiently to build a solid-propellant ICBM (designated Minuteman) and, in February 1958, it joined the growing list of USAF ballistic missiles under development.

[redacted] In September 1955 the NSC and the President accorded the accelerated ICBM program the highest national priority. In December they gave the IRBM's

* In 1946 the Air Force awarded a contract to Consolidated-Vultee to work on Project MX-744, the forerunner of the Atlas program. The contract was cancelled on 1 July 1947 for reasons of economy and was not reinstated until 1951.

the same priority. Assistant Secretary Gardner, however, expressed dissatisfaction with the financial support being given the ballistic missiles. He deemed their current status as an "accelerated" effort insufficient and wanted an all-out "crash" program. When he was unsuccessful, Mr. Gardner in February 1956 resigned in protest. When in August 1957 the Soviets announced they had successfully tested "a super long-distance intercontinental multi-stage ballistic missile" and several months later launched their Sputniks, Mr. Gardner's criticisms seemed justified. The Soviet achievements gave rise to the fear that Moscow had forged ahead of the United States in weapon development.[20]

[redacted] Meanwhile, USAF strategists had been discussing the problem of integrating missiles into the retaliatory force. As early as 1951 SAC had realized that this would have to be done without sacrificing combat readiness of the bomber force. During 1954-56 as the ICBM's neared operational status, discussions of their role were intensified with some USAF officials wondering whether the Air Force should shift from bombers to a weapon which once launched could not be recalled. In September 1956 the Air Staff definitely concluded that the Air Force should build a mixed force of manned aircraft and missiles and that ICBM's would not completely replace strategic aircraft in the foreseeable future. Some commanders believed overdependence on the missiles might lead to a "Maginot Line" complex and tend to isolate the United States from world affairs. General Twining thought ICBM's would be effective mainly against area targets and General Schriever believed they were mainly retaliatory weapons for use against an enemy's industrial base.[21]

[redacted] In the spring and summer of 1957 -- even before the Soviet's missile and space achievements -- Secretary of the Air Force Quarles and General White pressed for faster development of ICBM's. They and Maj. Gen. Donald

N. Yates, head of the Air Force Missile Test Center, believed that the Air Force had been slow to realize the potential of ballistic missiles because of the preoccupation of senior officers with manned aircraft. General White expressed concern that they might develop a "battleship attitude" toward the bomber. The Chief of Staff also thought that, in addition to learning more about ICBM's, the Air Force should study more closely the effect antiaircraft missiles might have on high-level bombing operations. Generals LeMay and Power, however, feared the Air Force was moving too fast and far toward ICBM's. Besides questioning the reliability and flexibility of the intercontinental missile, they believed bombers provided the best means of making a strategic "show of force." General LeMay did admit that, eventually, the ICBM would become SAC's major weapon. [22]

[redacted] The launching of the Soviet satellites in the fall of 1957, which was impressive evidence that Moscow was making unexpected advances in military technology, led to an acceleration of the U.S. ICBM program. The Russian achievement also led to passage of the Department of Defense Reorganization Act of 1958, which further centralized control of the defense establishment. This centralization resulted, in part, from a widespread belief that interservice rivalry and lack of unified direction had permitted the Soviet Union to forge ahead of the United States in strategic power. Some critics, including top-level USAF officers such as General White, favored a single military service organized according to mission. In April 1959, when the JCS began considering means for command and control of the Navy's Polaris missiles, the Chief of Staff recommended establishment of a unified strategic command to include SAC and missile-launching submarines. General Power supported his recommendation but, partly because of Navy objections, it was not adopted. Instead,

the Secretary of Defense in 1960 set up the interservice Joint Strategic Target Planning Staff with the SAC Commander-in-Chief as director. Located at SAC headquarters, Offutt AFB, Neb., this group was directly responsible to the JCS for preparing integrated targeting plans for general war, embodying all the strategic forces of the United States. The JCS subsequently adopted a Single Integrated Operational Plan (SIOP) under which all commands would integrate their strikes in case of war.[23]

[redacted] During the last three years of the decade, U.S. strategic missile planning led to agreements to station IRBM's -- Thor and Jupiter -- in the United Kingdom, Italy, and Turkey, and a decision to develop an advanced air-to-surface missile (Skybolt) to be used by both the U.S. Air Force and the Royal Air Force (RAF). In January 1957 the Secretary of Defense and the U.K. Minister of Defense laid groundwork for discussions in March between President Eisenhower and the British Prime Minister Harold Macmillan about stationing Thor IRBM's in Britain to counter the Russian deployment of intermediate range missiles in eastern Europe. Subsequently, the Secretary of Defense directed the Air Force to make technical arrangements with the RAF, which by March 1958 agreed that it would provide the necessary installations and man and control the IRBM's. Four squadrons of Thors were accepted by the British and most of them were implaced by June 1960. Agreements also were reached in 1959 with Italy and Turkey to deploy the Jupiter IRBM to those countries.[24]

[redacted] The Skybolt development project was initiated after the Air Force concluded that it badly needed an air-to-surface strategic missile to extend the effectiveness and useful life of the B-52.* After the Air Force formally proposed

* Hound Dog (GAM-77), a short range (500 mile) missile for the B-52, was deployed in one squadron in May 1960.

the development of Skybolt, the OSD Director of Guided Missiles in January 1959 asked the JCS for an evaluation. The Weapons System Evaluation Group (WSEG) reported that its development entailed major technical difficulties but the Joint Staff felt that it would greatly enhance strategic capabilities. Within the JCS, the Army and Navy opposed development on the grounds that it was ahead of the "state of the art" and would take money away from more feasible projects. Arguments over Skybolt continued through 1960, but in June of that year the Secretary of Defense and the British Minister of Defense signed a memo of understanding expressing their determination to cooperate in development of the missile for use by both the Air Force and RAF. Differences of opinion continued within the JCS, and in October 1960 it disagreed on giving Skybolt a high development priority and postponed any recommendation for production.[25] *

[redacted] As might be expected, the Soviet space exploits of October-November 1957, led to a careful examination and reorganization of the American astronautical effort which culminated in the creation of two new agencies -- the Advanced Research Projects Agency (ARPA) within the Department of Defense and the National Aeronautics and Space Administration (NASA), successor to the National Advisory Committee for Aeronautics (NACA). Determined that U.S. space activity would be confined as much as possible to peaceful purposes, President Eisenhower directed the assignment of most space projects to NASA. The Air Force subsequently transferred a number of space projects and some funds to the new space administration.[26]

[redacted] Despite the President's hopes that space activities be largely limited to peaceful purposes[+], USAF leaders foresaw many strategic uses of the medium.

* Skybolt was cancelled by the Kennedy administration in December 1962.

+ These hopes bore fruit some nine years later when the United States and the Soviet Union signed a treaty on 27 January 1967 pledging not to introduce military weapons into space.

In November 1957 General White declared that Sputnik marked the "dawn of the space age" and that the United States could not survive if it lost control of space. He described what he called the continuum of air and space and foresaw the use by the Air Force of both offensive and defensive weapons in what soon came to be termed "aerospace." Three months later he declared that control of space would approach "absolute deterrence." Secretary of the Air Force James H. Douglas appeared to endorse General White's contention that the USAF mission encompassed almost all activity in space. Most USAF planners foresaw the use of manned space vehicles in military operations.[27]

[redacted] After 1957 the United States established a large number of new space development projects, some supervised by ARPA, some by NASA, and all heavily dependent on the technological knowledge, hardware, and trained manpower of the military departments. The services undertook numerous studies of possible military applications of space to their missions, and keen rivalry soon arose among them. In September 1959, after a deadlock arose within the JCS over a proposal to establish a unified command to operate defense space systems, Secretary of Defense Neil H. McElroy decided to farm out certain ARPA-controlled projects to the services. The Air Force obtained developmental and operational responsibility for reconnaissance and early warning satellites, the Navy a navigational satellite, and the Army one for communications. Mr. McElroy's successor, Thomas S. Gates, Jr., reaffirmed this decision in June 1960. The Air Force also was given limited authority to proceed with development of Dyna-Soar, a piloted orbital glider that was to reenter the atmosphere, maneuver, and land at a selected air base. Still, at the close of the decade, many top defense officials remained skeptical that man would ever have a military role to perform in space.[28]

Air Defense

[redacted] Soviet technological advances also produced a crisis in U.S. air defense planning. After the Russians exploded their first atomic bomb in 1949, most American leaders agreed that air defense was one of the weakest links in the nation's military security. In June 1950 General Vandenberg and Maj. Gen. Gordon P. Saville, a top USAF air defense planner, advocated creation of a centralized air defense system that would make it difficult and costly for the Soviet Union to attack the United States. They expected that the system would only be about 60 percent effective, however, and cautioned against building it at the expense of counter-atomic offensive power. During the next few years the Air Force developed a series of advanced interceptor aircraft as well as a guided aircraft rocket, Falcon, and Bomarc, a surface-to-air missile.* In conjunction with Canada, it also undertook to establish three lines of radar stations to give advanced warning of attack. These included the Pinetree Line across southern Canada, the Mid-Canada Line along the 55th parallel, and the Distant Early Warning (DEW) Line, within the Arctic circle.[29]

[redacted] Behind the decision to build the DEW Line lay a period of intensive study by the Air Force, the other military services, the National Security Council, and civilian groups set up by the Massachusetts Institute of Technology (M.I.T.). The Institute established Project Charles to make a thorough study of the air defense problem and Lincoln Laboratory to carry out Charles recommendations and improve radar equipment. A Summer Study Group organized by Lincoln Laboratory confirmed in a report to the Secretary of Defense that the United States was highly vulnerable to air attack and recommended

* The Army developed the surface-to-air missiles, Nike Ajax, Nike Hercules, and the Hawk. The Navy also developed several interceptor missiles, including Terrier and Talos.

[redacted]

construction of the DEW Line stations. Although neither the Air Force nor the Office of the Secretary of Defense approved the Summer Study Group report, it was presented to the National Security Resources Board (NSRB) in September 1952. NSRB endorsed its recommendations and referred it to the National Security Council. Subsequently, President Truman accepted the NSC view that the DEW Line should constitute a major part of a strengthened continental air defense system. A final government decision was not reached, however, until early 1954. Construction began in early 1955, and the system became operational in August 1957.[30]

[redacted] The Department of Defense supplemented DEW Line by deploying picket ships and early warning aircraft on and over the oceans. It also built Texas Towers on shoals off the Atlantic coast and devised new techniques for the rapid handling of the data transmitted by the various warning stations. The latter was based on a high-speed, electronic digital computer that received, processed, stored, and displayed air surveillance information and sent instructions to air defense units. Technical facilities for the first installation of the system, known as Semi-automatic Ground Environment (SAGE), were built by 1957.

[redacted] In mid-1953 the JCS decided to organize a joint command for continental air defense. The details were not settled until September 1954, at which time it established the Continental Air Defense Command (CONAD), with the Air Force as executive agent and Gen. Benjamin W. Chidlaw as commander. In an emergency General Chidlaw (succeeded in 1955 by Gen. Earle E. Partridge) would control Army, Navy, and Marine as well as USAF defense forces. Senior representatives of the Army and Navy were named as advisers to the commander. Canada had been building air defense forces since 1951 and the two countries

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gradually undertook to integrate their defenses. In August 1957, in recognition of the fact that air defense of North America was a single problem, the United States and Canada formed the North American Air Defense Command (NORAD). Its commander, a USAF general, with a Canadian deputy, controlled all American and Canadian air defense forces.[31]

[redacted] The Soviet launching of the first satellites and intelligence reports that the Russians were pursuing development of the ICBM as their chief strategic weapon brought about a major reorientation of air defense in 1959-60. The United States cut back on segments of the system planned for defense against bombers and moved toward missile reconnaissance, detection, and warning systems. In January 1958 the Secretary of Defense approved development of the Ballistic Missile Early Warning System (BMEWS), with stations at Clear, Alaska; Thule, Greenland, and Fylingdales Moor in Yorkshire, England. Construction at Thule was completed by the end of 1960, was approaching completion at Clear, and was well under way at Fylingdales. BMEWS had the capability of providing a minimum of 15 minutes warning of an ICBM attack.

[redacted] Through the mid-1950's, many air leaders thought that scientific and technological advances could provide an effective defense against Soviet air weapons. In February 1955, Maj. Gen. Frederick H. Smith, Jr., Vice Commander of ADC, believed that more than 90 percent of the enemy's manned aircraft and air-breathing missiles enroute to the United States could be stopped. When he retired from CONAD in May 1955, General Chidlaw was equally optimistic. But with Soviet acquisition of the high-speed, long-range bomber and especially the ICBM, it became clear that air defense was not keeping pace with the threat. Many experts concluded that it was hopeless to defend against an ICBM attack. As a result, the Air Force tended to rely increasingly on offensive nuclear

capability, using air defense chiefly as a symbol of alertness against surprise attack and as an alarm system. The best hope for national survival continued to lie in maintaining superiority over the enemy in facilities, aircraft, ICBM's, and nuclear bombs and warheads.[32]

[redacted] Expressions of this attitude became more explicit among top air commanders after 1955. In early 1956 General LeMay stated that air defense's most useful service was to provide warning time for SAC. General Partridge of CONAD admitted that the best defense was a good offense. In the fall of 1957 General White described U.S. air defense as a "can of worms" because of the great diversity of weapon systems and warning devices -- Nike and Bomarc missiles, manned interceptors, radar equipment, etc. -- and expressed uncertainty about the effectiveness of any of them. The Air Force subsequently cut back procurement of the Bomarc, cancelled SAGE super combat centers, and dropped plans to produce the F-108, a highly advanced interceptor. The Chief of Staff defended these steps and the emphasis placed on offensive forces, stating that he had to make a judicious division of limited resources. He said air defense could absorb the whole national budget and still not guarantee complete effectiveness.[33]

[redacted] At the height of the 1957-58 discussions over the significance of Soviet launchings of ICBM's and satellites, the Army's Chief of Staff, General Taylor, urged the Secretary of Defense to approve a $6 billion crash program to develop the Nike-Zeus, the only weapon that seemed to promise any protection against ICBM's. General Taylor hoped this antimissile missile could be operational by 1961. Early in 1958 Secretary McElroy directed the Air Force to hasten perfection of its early-warning radar, communication links, and other more sophisticated devices and told the Army to continue with development of Nike-Zeus as a matter of urgency. Although the Army now seemed to have

responsibility for the most advanced air defense weapon, it was unable to get fiscal year 1961 funds to start deployment. The Air Force, Navy, and the chairman of the JCS doubted the weapon's effectiveness and feared its cost would unbalance the overall defense posture.

[redacted]Gen. Lawrence S. Kuter, commander of NORAD in 1960, vigorously dissented from the USAF decision to reduce air defense efforts. He asked that the F-108 interceptor, Bomarc, and other programs be continued in accordance with original plans and that Zeus be produced as soon as possible. He insisted that the Air Force was neglecting air defense, which he said the nation badly needed to supplement its offensive power. General White, however, remained convinced that a satisfactory defense against intercontinental missiles could not soon be devised and that, therefore, it was necessary to concentrate on building up the nation's strategic offensive power. Most Air Staff and top defense officials agreed.[34]

V. CONFLICTING INTERPRETATIONS OF DETERRENCE

The chief instrument of U.S. deterrence between 1945 and 1960 was unquestionably America's strategic striking force, embodied in SAC's medium range and intercontinental bombers armed with atomic and TN bombs. This nuclear air force introduced a new element into warfare, compressing into a few hours the time required to make a deep penetration attack against a hostile power. Conversely it was expected the enemy also would be able to make a similar assault against the United States. If, as became likely after 1955, ICBM's eventually assumed some of the missions previously assinged to manned bombers, the time interval between attack and counterattack would shrink from hours to minutes. It therefore seemed possible that within the foreseeable future two nations could annihilate each other almost simultaneously. Indeed, with the passage of time, as the Soviet Union proceeded to build a nuclear arsenal and acquired effective delivery systems, it became more difficult for the United States to preserve its power to deter general war or survive one if it occurred. United States officials concluded that American offensive and defensive power had to equal or surpass the offensive and defensive power of the Soviet Union. Otherwise, deterrence would lose its validity. Even so, by late 1957 some observers of the international scene were saying that deterrence had come to be little more than a you-kill-me-and-I-kill-you philosophy. Although apparently preventing general war and protecting the West from Soviet imperialism, it did not create a stable or comfortable world order.[1]

This unhappy situation during the middle and late 1950's provoked debate and controversy over the true nature of deterrence and how much retaliatory power was needed to deter an implacable enemy. Some U.S. military and political leaders introduced the notion of mutual deterrence or nuclear

stalemate and declared that the time was near at hand when nations would have to abandon war as an instrument of policy. One of the liveliest debates came to center around the concepts of counterforce and minimum or finite deterrence. Under the counterforce strategy, the enemy's strategic air and missile forces were the main targets; with finite or minimum deterrence, the enemy's great cities and industrial centers became the major targets. In practice neither strategy could be carried out exclusive of the other because air and missile bases were often located near large cities. Army and Navy leaders and their partisans who wanted more resources for conventional limited war, advocated minimum deterrence. Most USAF leaders advocated counterforce and pressed for further strengthening of strategic nuclear forces while keeping conventional forces quite modest.[2]

Nuclear Stalemate

[redacted]The insistence by Army and Navy officials on more adequate preparation for limited conventional war grew out of their general belief that a condition of nuclear stalemate -- mutual deterrence -- had arrived or at least would come about by the early 1960's. This possibility had been discussed by British and American military, political, and scientific leaders. In Britain they included Air Chief Marshals Sir Charles Portal (now Viscount Portal of Hungerford) and Sir John Slessor, Sir Winston Churchill, and the physicist, P.M.S. Blackett. In the United States they included J. Robert Oppenheimer, Vannevar Bush, and even Secretary of the Air Force Quarles. In 1953 Dr. Oppenheimer compared the United States and the Soviet Union to two scorpions in a bottle, either of which could kill the other but only at the risk of itself being killed. In May 1954, Air Chief Marshal Slessor declared that total war had abolished itself, "...now that new ultimate weapons of atomic and thermonuclear power

are in the hands of both potential antagonists." He believed the Soviet Union had realized the costliness of attempting to overwhelm the West by direct assault and would seek to turn or undermine its defenses by other means. In his fiscal year 1955 report Secretary Quarles remarked that the United States and Russia were moving into an era of mutual deterrence in which their power to destroy each other would be reciprocal. In April 1957 he suggested to the Secretary of Defense that general war had become less likely and limited war more likely. This type of thinking grew more pronounced as the United States and the Soviet Union obtained more devastating TN weapons.[3]

[redacted] With the exception of Secretary Quarles, USAF leaders were skeptical of the notion of nuclear stalemate or mutual deterrence. In the spring of 1957 General Twining, Chairman of JCS, declared that it was a dangerous fallacy to believe that total war had been abolished by a nuclear stalemate. General Spaatz, the retired Chief of Staff and part-time news commentator, agreed. He thought general war was still possible because the United States could not depend on dictators acting rationally. In June 1958 Secretary of Defense McElroy warned against allowing anybody to get the notion that the United States would not use nuclear weapons if it needed to do so. Generals LeMay and White also believed the concept of mutual deterrence was fraught with dangers. In the spring of 1960 General White took "particular exception" to the idea of mutual deterrence, observing that the United States had no plans to commit aggression and, consequently, was not being deterred. Deterrence was a one-sided affair. The Soviet Union and the rest of the world knew the United States would not attack except in response to aggression. In his view deterrence applied only to a potential aggressor, and only the Communist states had demonstrated aggressive intentions.[4]

Counterforce

[redacted] Although the term did not gain wide currency before 1957, counterforce was a relatively old concept in USAF circles. In June 1950 General Saville told students at the Air War College that SAC's number-one mission should be a "counter-atomic offensive." In February 1951 General Vanderberg emphasized that the Air Force had to be able to destroy the Soviet Union's air power as well as its industrial potential. He, too, stated that SAC's first priority was to strike the enemy's "atomic delivery capability" at the outset of hostilities. During the period between late 1953 and January 1955 Generals LeMay, White, and Twining reiterated the counterforce idea. General LeMay thought the Air Force should forget some of its subsidiary missions and concentrate on winning the air battle first. This meant destroying the enemy's ability to damage the United States. General White asserted that hostile air forces would always be the primary target of the Air Force. In February 1954 General Twining suggested that the Air Force aim at disarming an enemy rather than destroying him.[5]

[redacted] General LeMay's contention that the Air Force should give up some tasks referred primarily to the retardation mission, which the JCS had directed SAC to assume in January 1950. The JCS had taken this action, largely at the request of the Army, because of fear that in a general war the Soviet army could still occupy western Europe, even if SAC destroyed the war-making potential of Russia. As a result, the Air Force had prepared a list of targets, the destruction of which would retard and perhaps stop a Soviet advance to the west.

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Despite conflict with SAC's strategic mission, LeMay accepted the retardation task without objection. In March 1953, when JCS offered to relieve SAC of this job, Headquarters USAF demurred, partly because it feared the Air Force might lose the mission altogether. This episode illustrated the effect of nuclear weapons in breaking down the barriers between strategic and tactical airpower. While conceding that retardation was essentially a tactical mission, some war planners thought the advantages gained for the Air Force by having SAC keep it outweighed the disadvantages. Also the Air Force feared it would not have enough suitable tactical aircraft to handle the job much before 1956.[6]

[redacted] What changed the attitude of LeMay and his colleagues was the Soviet Union's acquisition of sufficient nuclear power to severely damage the United States. When this occurred SAC's first responsibility would be to destroy the installations and facilities from which the enemy could strike the United States with nuclear weapons. In 1953 and 1954 former Air Force Secretary Finletter expressed the view of many USAF strategists when he declared that the United States must give up the old counter-industry concept and substitute what he called a "front-to-rear" policy -- striking with nuclear weapons the enemy's communications, airfields, storage depots, supply lines, and control centers from the front lines to the heart of the nation. Soviet air-atomic forces would have first priority. When these had been immobilized, emphasis could then shift to other military forces, industries, and Russia's ability to function as an organized state. Other commentators, including Teddy F. Walkowicz of the USAF Scientific Advisory Board, agreed that as Soviet air-atomic force became powerful it, rather than the Soviet economy, constituted the primary target in the event of war. Counterforce advocates believed that when its

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nuclear strike force became sufficiently strong, the United States could choose and openly announce a policy of using it primarily against the enemy's strategic weapons. Some Air Force officers looked upon counterforce as the most humane method of waging war in an age of nuclear plenty, since there was no necessity to bomb cities in order to win. Nuclear war would still be horrible but not necessarily suicidal. Some believed the United States ought to renounce city bombing except in retaliation against an enemy's mass attack on Free World cities.[7]

Although there were doubters within the Air Staff, counterforce gained growing support from 1955 to the end of the decade. In June 1955 the Directorate of Plans stated that the "no city busting" concept agreed substantially with USAF policy but admitted that the Air Force still planned to use the full weight of its capabilities against any nuclear aggression. In September 1958, the Weapons Systems Evaluation Group stressed the necessity for counterforce capability. In December 1958 the Chief of Staff approved a USAF position which stated that for deterrence to be credible the United States would have to be able to destroy "a critical part" of the Soviet capacity to strike with nuclear weapons. And in August 1960 a study group made up of general officers representing Headquarters USAF, SAC, TAC, and ADC, declared that counterforce was the only sound strategic concept for the 1960-1970 period. Thus, by the end of 1960 counterforce had become a major element in USAF policy.[8]

In urging the administration to provide the very large air forces a counterforce strategy demanded, General White in September 1960 declared that they were needed to make deterrence fully credible. He said that if war occurred the United States would need enough military power to prevail. He recognized that the terms "deter" and "prevail" might seem contradictory since the ability to prevail would be necessary only if deterrence failed. But,

he declared, it was the ability to prevail that provided effective deterrence. In essence, he was saying that the only real safety for the United States lay in overwhelming strategic power.[9]

[redacted] Despite these arguments, some USAF leaders expressed reservations about placing the entire emphasis on counterforce and strategic power. For example, General Weyland believed -- in the period before the Soviets developed a long-range strike force -- that tactical forces equipped with nuclear bombs and advanced aircraft could launch the main attack against the enemy's air units. He thought that the major mission of SAC should continue to be the destruction of the Soviet's war-sustaining industries and resources. On the other hand, counterforce was weakened when SAC strategists pointed to the growing bonus effect. As nuclear bombs and warheads became more powerful, each one could destroy more than a single target. Some of these bonus targets would undoubtedly be cities located close to the enemy's atomic storage installations, airfields, or missile sites. Another problem in carrying out a counterforce strategy was the uncertainty of targeting information -- intelligence. Reconnaissance might not be able to locate all of the enemy's major installations before they had launched their nuclear weapons.

[redacted] Furthermore, contrary to a belief held by some USAF officers that war was becoming so scientific that the United States could predict exactly what its weapons would accomplish, General White insisted that a nuclear war would cause almost unimaginable confusion. He admitted that if the Soviet Union launched a surprise attack the U.S. would have to improvise its response. Then, the strategic task would be to do as much damage as possible to the Soviet nation. The possibility of this kind of disaster led Generals Power and Schriever to argue that, under certain circumstances, the United

States might strike first. They were careful to point out that they were not suggesting preventive war. But they said the United States ought to "preempt" an impending enemy attack if there was positive evidence it was about to take place. The Power-Schriever proposal was not acted upon. Reliance instead was placed on dispersal of SAC's units and its "Fail Safe" concept, whereby alert forces were launched toward enemy targets, but turned back at a certain point unless they received additional specific instructions to continue.[10]

Minimum Deterrence

[redacted] Arguments for minimum or finite deterrence arose from a conviction of the Army and Navy, plus a number of unofficial civilian writers, that there was or soon would be a nuclear stalemate. Consequently, they concluded that U.S. strategic nuclear forces were larger than needed and were absorbing too large a share of defense resources. Since general nuclear war had been deterred, they believed limited local wars posed the most likely danger to the United States and its allies in the future and that the military services very badly needed stronger forces to cope with such conflicts. In July 1955 General Taylor, the Army Chief of Staff, developed a concept that he called "flexible response", which gave less emphasis to strategic retaliation and more to all around readiness. In February 1956, although he failed to persuade the Secretary of Defense to change the distribution of funds in the fiscal year 1957 budget, Taylor reiterated his ideas before the House Appropriations Subcommittee. The following August, Secretary Quarles enunciated his theory of "sufficiency", stating that the relative atomic power of the United States and the Soviet Union was less important than "absolute" power and the invulnerability of this power to interdiction. If U.S. power was invulnerable and strong enought to devastate the USSR, it was sufficient. This idea approached minimum deterrence.[11]

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[redacted] Within the JCS the Army and Navy pushed for limiting the nuclear deterrent. In September 1958 the Army proposed that a sufficient but not excessive number of targets in the Sino-Soviet Bloc be identified which, when destroyed, would prevent it from waging war. The Air Force considered this an attempt to shift from counterforce to softer targets, such as cities, and managed to divert the proposal. The following May the Army and Navy opposed giving Minuteman the highest national priority, partly as an attack on the counterforce strategy. The Navy contended that its Polaris, then under development, would be a superior deterrent because it was invulnerable, and Navy representatives insisted that the United States should establish a strategic target plan consisting of less than 200 Soviet cities. This was clearly minimum deterrence, which the Navy argued Polaris alone could provide. Minuteman, nevertheless, received the highest national priority.[12]

[redacted] Meanwhile, General Taylor had again pushed his views during testimony in January 1959 before the House Subcommittee on Appropriations. He declared that the United States had far more strategic nuclear weapons than it needed; enough to annihilate the enemy some 10 times. Taylor's view of U.S. strike plans soon became known as "overkill." The following month he was joined by Adm. Arleigh A. Burke, Chief of Naval Operations, who agreed that the retaliatory power was excessive and that some of the money programmed for it should be used to strengthen limited war forces. In March Burke estimated that 30 submarines carrying Polaris missiles could deter the Soviet Union. To arrive at this figure he calculated the number of important Russian cities, the number of megatons needed to destroy each, the megatons in each warhead, the reliability of the missiles, and then doubled his estimate to provide a safety factor. In favor of Polaris as the main deterrent and opposed to USAF

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counterforce, naval and other critics argued that the former were safe from attack whereas SAC's bombers had become highly vulnerable. Further, they said, the Polaris deterrent could be kept "minimum" but entirely effective, and the United States could put behind it forever the frightening possibility of general nuclear war.[13]

[redacted] The critics noted further that to protect SAC's forces, bombers had to be dispersed and missile sites hardened. Since the Russains could reciprocate, maintaining the counterforce strategy would perpetuate a spiralling arms race. In October 1960, a Navy strategic study concluded that this process, even including construction of civilian defense shelters, might persuade the Soviet leaders that the United States was planning preventive war. Conceivably, Moscow might then launch a preemptive attack, thus starting the very war U.S. strategists had sought to deter. Under the finite (minimum) deterrent strategy, if the Soviet Union started a nuclear war by accident, the United States would destroy two or three Soviet cities and then pause. This would allow time between strikes for negotiation. By achieving some such "controlled response," the United States could avoid a total nuclear war. Proponents of these arguments, including Secretary of the Navy Thomas Gates, who became Secretary of Defense in December 1959, in essence accepted mutual deterrence and concluded that the power to prevent or defeat limited aggression had become decisive. The United States should maintain only a minimum deterrent and proceed quickly to build forces to combat limited wars.[14]

[redacted] In 1958 and 1959 Mr. Paul H. Nitze and the staff of the Washington Center for Foreign Policy Research proposed a strategy known as graduated deterrence. They approved counterforce to the extent that it gave first priority

[redacted]

to maintenance and protection of superior nuclear forces and using them against military targets. However, they favored meeting aggression without using nuclear weapons whenever possible, limiting the geographical area of conflicts, and building western conventional strength to combat lesser enemy actions, ranging from mere subversion to substantial attacks on overseas allies. Essentially, the advocates of graduated deterrence wanted to reduce the extent to which U.S. and allied security depended on nuclear weapons. This was to become a major objective of the Kennedy and Johnson administrations in the 1960's.[15]

[redacted] Most USAF strategists criticized minimum deterrence as a "bluff strategy" that would not provide enough forces to limit damage to the United States or win a war if one occurred. General LeMay thought the United States would be gambling far more than it should if it assumed that a weaker force could deter a stronger force from attacking . He insisted that the validity of the U.S. deterrent depended on its being large enough to punish an enemy with great severity, even if the enemy struck first. General Power argued that the United States could not afford to maintain only a small deterrent because it could never ascertain accurately what would be required to deter Moscow or Peking. Furthermore, USAF leaders declared, a stable situation such as a nuclear stalemate, if it existed, could not be maintained for long in a world of dynamic technology. They also insisted that deterrence resulted from the ability of the United States to fight and win a war. This demanded the power to destroy the enemy's weapons as well as his industrial capacity and his people.

[redacted] The Air Force admitted that the outbreak of nuclear war would mean that SAC had failed in much of its mission, but it did not admit that all

participants in such a conflict would be defeated. Nuclear war was horrible but with proper precautions and sufficient strength the United States could survive. USAF leaders asserted that concepts such as minimum deterrence, finite deterrence, and graduated deterrence were little more than rationalizations for reducing the cost of national defense, or elements thereof. The Air Force rejected the claim that a counter-city strategy provided adequate deterrence because one could never know in advance whether loss of his cities would deter the enemy. In addition, as General White observed, finite deterrence presaged a "fortress America" policy with the United States reduced to a passive role. Since it could never take the initiative, the United States would lose its political and military influence as a world power.[16]

Conventional Forces for Limited War

By the middle 1950's almost everybody recognized the possibility of limited wars, but many, including top officials in the Air Force, believed that no special programs were needed to deter or win them. In their view, if the country prepared properly for a major war, it was obviously prepared for a small war. Other military and political leaders especially sensitive to the dangers of limited war divided over the proper means to meet the danger. General Taylor and Navy leaders argued that the United States needed conventional forces that could quickly deploy to likely trouble spots to deter or defeat small-scale aggression. The Army and some civilian observers were critical of the Air Force for not providing adequate airlift to improve the mobility of combat units especially trained for this mission. Other advocates of preparation for limited war, including some USAF officials and ranking members of the Eisenhower administration, wanted to rely mainly on tactical nuclear weapons. There were also disputes over which service,

or services, should have the mission.

In some respects the idea of limited war was alien to the whole American concept of war and peace; many people, including some important military leaders, did not think the United States should enter a war unless it felt strongly enough about the issue to fight through to total victory. Also, the policy of supporting substantial regular military forces in a high degree of readiness for combat was an important change from the mobilization concept reigning in the United States before the Korean war. When this heritage of the past was abandoned in the 1950's, perhaps the major impediment to strengthening conventional forces was the budgetary restrictions, which became especially acute during the later years of the Eisenhower administration. Since the government sought to limit overall military expenditures, money for limited war forces would have to be deducted from other favored programs. This factor alone explained much of the controversy that characterized military planning between 1954 and 1960. Strategic retaliatory forces did not in fact suffer appreciably from budgetary restrictions during the 1950's, although top USAF officials had feared that if large sums were spent on preparation for limited war, the strategic deterrent would be weakened.[17]

In 1955 the administration seemed to recognize the need for versatile forces to combat limited aggression but took no action because of the cost. It authorized the individual services to strengthen conventional forces, but only within restricted budgetary limits. One way out of this dilemma appeared to be to use tactical nuclear weapons in limited war. Between 1954 and 1958 administration spokesmen often referred to the possibility of meeting limited aggression with a carefully controlled use of nuclear weapons. In September 1957, Secretary of State Dulles stated that tactical nuclear weapons could effectively

defend the Free World against large-scale conventional attacks by the Soviet Union.[18]

During the mid-1950's Army leaders and civilian critics of U.S. military strategy began actively to question the validity of the New Look and massive retaliation. General Taylor said he believed the Communists would likely resort to subversion and limited aggression rather than allout war. His chief of research and development, Lt. Gen. James M. Gavin, on May 1956 argued before Senator Stuart Symington's committee investigating air power that, in the coming missile age, ability to control the land would be decisive and that aircraft could not do it. Modern jets were too fast to control land areas and all planes would be increasingly vulnerable to surface-to-air missiles. Only ground forces could perform the mission adequately.

The Taylor-Gavin thesis seemed to be borne out by the Lebanon and Taiwan crises of 1958. At the request of the Lebanese government, which was threatened by subversion and dissolution, the United States dispatched troops to that Middle East country in mid-July. The following month, in response to a Chinese Communist threat to the peace in the Taiwan straits, the Air Force dispatched a composite air strike force (CASF) of jet fighters and medium bombers to Taiwan and Okinawa. In both cases the administration made the decision not to use nuclear weapons in the event of an armed clash. General Taylor and Army Secretary Wilbur M. Brucker cited the Lebanon and Taiwan crises as evidence that the Communists would increasingly use local incidents to achieve their purposes bit by bit.* General Taylor told the NSC that in small conflicts in many

* Not so well known, but perhaps more accurately portending further events, was the Laos crisis of July-October 1959, in which U.S. forces were readied to assist the Government of Laos defeat Pathet Lao subversion, aided and abetted by North Vietnam. Pathet Lao operations subsided after the U.N. Security Council sent observers to Laos in September. In planning this operation, the Air Staff, especially General White, believed the JCS should have included larger contingents of air forces, including nuclear-armed B-47's based at Clark AB, P.I. (See George F. Lemmer, The Laos Crisis of 1959 (AFCHO, 1961), especially pp 52-56.)

parts of the world the United States would not want to use nuclear weapons. Navy Secretary Gates also doubted that general war weapons could meet the needs of limited war because restraint would have to be exercised in the latter.[19]

The Air Force remained dubious. Top officials on the Air Staff and in SAC continued to emphasize the use of air power and nuclear weapons to deter both general and limited wars. General Twining did not think it could be said that one kind of war was more likely to occur than another. General LeMay questioned whether the United States could afford different weapon systems for different kinds of war. Although he worried about limited wars in which nuclear weapons might be prohibited, General Power saw the Lebanon and Taiwan incidents as a demonstration of the deterrence of both general and small wars. Through 1960, at least, General White held with the position that he had enunciated in August 1957: the United States deterred war with its total forces and in a specific situation would use that part required. At the end of 1958 he declared that the Soviet Union had been deterred from exploiting the Lebanon and Taiwan crises largely by American long-range air power rather than by the battalions, ships, and tactical aircraft dispatched to or located in the threatened areas.[20]

Within the Air Force, however, there was a vocal minority that favored preparation for limited war. General Weyland, Commander of TAC and the most articulate spokesman of this group, suggested at a USAF Commanders Conference in May 1954 that TAC organize a mobile tactical air force that could quickly deploy to meet contingencies anywhere in the world. Shortages of funds and manpower and the higher priority of other programs delayed the project until July 1955, when TAC established the Nineteenth Air Force to form the composite air strike force. In September 1956 Brig. Gen. Henry P. Viccellio, Commander of the Nineteenth, moved a small CASF to Europe, crossing the Atlantic in about five hours. During the next two or three years Generals Weyland and

Viccellio often stated their belief that the CASF's could deter limited war as SAC deterred general war. Much in accord with the Army's viewpoint, the TAC commander believed the world faced a period of peripheral or "brush fire" wars that would have to be countered with tactical forces.[21]

[redacted] Nevertheless, special limited war forces, particularly those armed only with conventional weapons, obtained niggardly support in the Air Force during the late 1950's. SAC partisans within the Air Staff doubted that a nation would start a localized war with any expectation that it would stay local In their view a strong nation that had decided for war would go "all out." Most evidence derived from intelligence after 1955 indicated that the Soviet Union gave little attention to limited war but devoted its major efforts toward developing long-range air and missile forces. Although top USAF commanders and civilian leaders continued to believe that the United States could successfully deter both general and limited wars, Headquarters USAF did recognize that moderate military power could be brought to bear cheaper with tactical than with strategic forces. However, tactical units were considered vulnerable; they were often based close to the enemy, lacked range without frequent refueling, and had little ability to operate in inclement weather and at night.

[redacted] Since early 1953, when former Secretary Finletter proposed uniting SAC and TAC into one offensive atomic force, there had been strong [redacted] ment for such a union among many air leaders, including General LeMay. As TAC became more proficient with nuclear bombs this sentiment grew. But General Weyland believed theater commanders needed forces for both limited and general war and, when he assumed command of TAC in 1954, he placed emphasis on waging a tactical atomic offensive and also supporting ground warfare. In May 1957 for example, General Weyland said he could not visualize

B-52's locating guerrillas and dropping bombs on them in the jungles of Indo-China.[22]

[redacted] General White compromised. He supported General Weyland to some extent, but during 1957-1959 he frequently questioned whether tactical air forces would have a continuing valid function in the age of missiles. A major factor in the Chief of Staff's decisions was the tightening budget. In February 1958, when he was forced to reduce planned forces, he cut the number of tactical wings, citing the relative inefficiency of tactical aircraft as justification. He also believed army missile units could fill some of the tactical requirement. Before the end of 1959, USAF tactical strength was headed toward a low of 13 wings.* Nevertheless, in March 1960 General White declared that the tactical air mission was a primary function for which manned aircraft would be needed as far in the future as he could see.

[redacted] As strength declined, sentiment developed for cutting back on the jobs tactical forces would be expected to perform. In May 1960 TAC proposed that the CASF's be responsible for limited war only, but Headquarters USAF decided that they should remain prepared to assume other emergency duties, apparently nuclear strategic, if the need arose. Subsequently, General White admitted that the Air Force had tried to go too far with an all-purpose mission for TAC.[23]

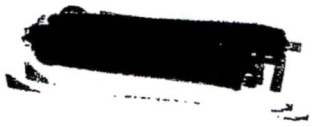
[redacted] Another dilemma facing tactical air forces was whether they should use conventional weapons, nuclear weapons, or maintain a "dual capability." Officially they were prepared for both, but in actuality they had come close to losing their proficiency with conventional weapons by the summer of 1958. In December 1955 the Air Staff still supported dual capability because nuclear weapons were not appropriate militarily or politically for all targets. Although

* This trend was reversed in 1961 by the Kennedy administration.

the Air Council and the NSC believed in continuing the ability to use both conventional and nuclear munitions, the Air Force insisted that U.S. forces must be free to use nuclear weapons in limited as well as general war.

[redacted] In April 1957 USAF representatives at a Pentagon meeting agreed to an effort to eliminate gradually all conventional weapons from the inventory. Since national policy still called for maintaining an ability to fight without nuclear weapons, they agreed that the Air Force would continue to program for a dual capability in its tactical units. However, it would initiate an educational program to convince the country of the superiority of nuclear weapons -- that they were actually conventional -- and "let time erase the major portion of USAF high-explosive capability." The unpreparedness of tactical units in the Pacific at the time of the Taiwan crisis when the President directed the use of conventional weapons only demonstrated how far the process had gone by the fall of 1958. Although the Lebanon and Taiwan crises seemed to justify a growing belief that in may situations the United States would not want to use nuclear weapons, the Air Force was not convinced. In the spring of 1960 Gen. Frederic H. Smith, Jr., Commander-in-Chief of United States Air Forces in Europe, declared that tactical nuclear weapons were suitable for limited war and that the United States would have to use them to win in may areas.[24]

[redacted] Advocates of finite deterrence and greatly augmented preparation for limited war did not gain their objectives in the 1950's, since the administration proved unwilling either to reduce nuclear strategic power or to spend large sums on conventional forces. In 1960, even with former Secretary of the Navy Thomas Gates as Secretary of Defense, the fiscal year 1961 budget reflected little change in relative amounts for the different missions. Mr. Gates stated that military forces could not be arbitrarily divided between general and limited war. All were deterrent, all would be used in a general war, and



most of them would be useful in limited wars. The Army, under the leadership of its new Chief of Staff, Gen. Lyman L. Lemnitzer, now placed less emphasis on overkill and admitted the risk of significantly reducing the strategic force. Nevertheless, the controversy of the 1950's presaged a new trend. The Army, Navy, and Marine Corps had continued to maintain and train large combat elements for limited war. The Army created a Strategic Army Corps (STRAC) for quick deployment to trouble spots and even the Air Force strengthened its CASF's and airlift units, despite the quite limited funds for this purpose.[25]



VI. SUMMARY AND CONCLUSION

In the period 1950-1960 technological, military, and political developments created a threat to U.S. security that far surpassed anything the nation had heretofore experienced. Soviet acquisition of the nuclear bomb in the summer of 1949 and instigation of aggression in Korea in 1950 persuaded the U.S. government to rearm on a scale previously unknown in peacetime and to build the NATO alliance as the most practicable means of insuring the common defense of the West. By 1954 the United States and its NATO allies had decided that it would not be economically or politically feasible to raise large enough conventional forces to contain Soviet aggression. As a result, the NATO Council chose to rely on nuclear weapons at the outset of a Soviet attack. Nuclear defense forces -- ground and tactical air -- would provide a "shield" at a forward defense line while SAC, U.S. Navy nuclear forces, and eventually the British Bomber Command, would provide a "sword" to attack the Soviet Union and destroy its ability to make war. Thus by threatening to strike with nuclear weapons from the front lines back to the heart of the Communist state, American and European leaders hoped to deter the Russians indefinitely from starting a major war.

During the 1950's most Air Force leaders and the responsible political leadership of the Eisenhower administration continued to believe that the primary danger to the United States and the Free World arose from the aggressive designs of the Soviet Union and its Communist allies who intended to subjugate the western democracies in any way possible. The Korean episode had convinced Americans that Moscow was willing to employ war to attain its objectives. It was also clear that nuclear weapons gave a tremendous advantage to the antagonist who was willing

[redacted]

to strike without warning. Since American political and military leaders generally forswore such a policy, the United States was at a disadvantage and many feared that a surprise attack might render the nation helpless. After about 1955, when Moscow obtained high-yield, long-range weapons, the possibility of war became frightening.

[redacted]Out of this matrix the Air Force developed a relatively consistent concept of war and a policy for protecting the United States. First, it hoped to deter general war altogether by building such a powerful and unassailable nuclear strike force that the Soviet Union or any other potential aggressor would recognize that war would cost more than could possibly be gained from it. USAF leaders believed that, having once decided on war, Moscow would initiate it with a massive attack and hope to eliminate quickly America's offensive power. Consequently, the initial stage of a war would likely be decisive. No nation could hope to raise military forces after a war had started and emerge victorious, or even survive. Only those forces ready for combat when a war started would be of any practical use. Furthermore, destruction of the enemy's ability to make war would be the primary tasks of U.S. forces. It followed, therefore, that first priority among the components of U.S. military posture should go to the nuclear strategic air forces, for only these could quickly strike the sources of enemy power.

[redacted]As the decade progressed and the Soviet Union built up its strategic air power, the effort to protect the United States and its strike forces became a formidable task. USAF leaders consequently adopted the counterforce strategy to make enemy weapons rather than industry and urban centers the primary targets. As outlined by General White, the Air Force's objectives in case of war included eliminating the enemy's ability to destroy the United States, blunting the enemy's attack on allied military forces in Europe and Asia, and systematically wipe out

Moscow's ability to wage war. USAF strategists wanted enough strategic power to carry out these objectives even if many weapons were lost during a surprise enemy attack. If the Soviet Union refused to be deterred and war began, they hoped to win or at least to destroy enough of the enemy's weapons so that the United States could survive the disaster. This task seemed so difficult and costly and portended so much danger for the nation that some air leaders concluded that the United States should never permit the Soviet Union to launch a major first strike. If national leaders obtained unequivocal evidence that an enemy was about to attack, they should "preempt" his strike.

[redacted] Since powerful nuclear weapons and strategic air power seemed the most economical and effective means of providing adequate deterrence against attack by great land powers, the Eisenhower administration generally accepted the Air Force's ideas. But the President's commitment to economy in government meant that there was never enough money to satisfy the services. Even the Air Force, which received the largest share of defense funds during these years, felt frustrated and often argued that the country was taking unjustifiable risks. As the pace of technological progress quickened, the cost of supporting a strategic force powerful enough to destroy the Soviet Union grew rapidly, while the total defense budget remained fairly stable. And, of course, large amounts were still required to finance air defense and Army, Navy, and USAF tactical forces.

[redacted] About 1955 the belief arose among some civilian and military officials in the United States and Europe that the powerful cold war antagonists were arriving at a nuclear stalemate and that general war had become irrational. If this were true, the danger of a cataclysmic conflict would disappear and the world would instead face a series of conventional, limited, and local wars or

revolutions, generally instigated by the Communists in order to undermine the West and conquer it bit by bit. It followed that the United States must prepare for this kind of conflict. Furthermore, the argument ran, the United States should reduce its strategic nuclear forces, already strong enough to destroy the enemy 10 times over, and spend the savings on conventional forces. A "minimum" or "finite" deterrent, if made safe from surprise attack, would prevent general war, while additional forces could be raised to deter or suppress "brush fire" wars around the perimeter of the Free World. A vital objective of this strategy of "flexible response" was to make U.S. military policy less dependent on nuclear weapons, which if used in large numbers could bring disaster to the whole world. The Lebanon and Taiwan crises of 1958 seemed to confirm that there might be numerous conflicts where the United States would want to act but not employ nuclear weapons.

[redacted] Some USAF leaders agreed with this assumption and the Air Force took modest steps to prepare its tactical units for local war. In general, however, the dominant USAF leaders were highly dubious of the validity of nuclear stalemate, minimum deterrence, and flexible response. They believed it was very dangerous to assume that nuclear war would not occur merely because it would be horrible. They did not think the United States could depend on a minimum deterrent to prevent general war when the enemy possessed powerful nuclear armaments. They continued to argue that forces that deterred general wars would deter limited ones and they doubted that wars which affected any vital interest of the United States or the Soviet Union would long stay small or limited. And several of them questioned whether the United States could afford or would be willing to finance different types of combat units to fight different kinds of wars. Most USAF generals believed that it was essential that the United States, at all costs, maintain an overwhelming strategic superiority over

the Soviet Union or risk catastrophe.

[redacted]t the end of the decade USAF strategic concepts, with minor modifications, still dominated U.S. military thinking. Strategic nuclear weapons retained first priority for military funds and the advocates of finite deterrence and greatly increased conventional war forces made little headway in changing the character of the defense budget. The critics of national strategy, however, had made a strong impression and some rather significant changes lay in the near future. Perhaps the most serious challenge to the national defense policy of the Eisenhower era came from those who believed that the concept of deterrence and the continuous deployment of more devastating weapons offered no satisfactory answers to the problems of peace and war. While deterrence seemed to work and had thus far prevented general war, the danger of disaster had not lessened and perhaps, even increased. Until some progress was made toward a political understanding with the Soviet Union, there seemed to be no practicable alternative for the United States except to continue to maintain its powerful nuclear retaliatory forces into the foreseeable future.

NOTES

Chapter I

1. Samuel P. Huntington, The Common Defense; Strategic Programs in National Defense (N.Y., 1961), pp 426-28; Harry S. Truman, Memoirs; Years of Trial and Hope, II, (N.Y., 1956), pp 306-307, 331 ff.

2. George F. Lemmer, The Air Force and the Concept of Deterrence, 1945-1950 (S) (AFCHO, 1963), pp 13-21; Air Force Objective Series (AFOS), 2/11 (C), "USAF Views on Deterrence," 9 Sep 60; Huntington, pp 426-28.

3. Huntington, p 428.

4. Ibid., p 45; Bernard Brodie, Strategy in the Missile Age (Princeton, 1959) Chaps 7 & 8.

5. Warner R. Schilling, Paul Y. Hammond, and Glenn H. Snyder, Strategy, Politics, and Defense Budgets (N.Y., 1962), pp 305-307, 349-58, 362-63; Truman, II, pp 294, 306-310; Huntington, pp 48, 59-60.

6. R. Frank Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the USAF, 1907-1964 (USAF Historical Study 139, (draft MSS), p 504; Harry S. Truman (quoted in N.Y. Times, 8 Jun 52); Hist (TS), Dir/Plans, Jan-Jun 1951, pp 19-21, Jul-Dec 1951, pp 90-91.

7. Futrell, pp 466-67, 495.

8. Alfred Goldberg, ed., A History of the United States Air Force, 1907-1957 (Princeton, 1957), p 192; Futrell, pp 633-36.

9. Lee Bowen and Robert D. Little, History of the Air Force Atomic Energy Program (TS), (AFCHO, 1959), III, pp 300-303.

10. Ibid., IV, pp 91-92.

11. Futrell, p 507; Thomas K. Finletter, Power and Policy (N.Y., 1954), pp 3-18, 19-35, 240-45.

12. Hist (TS), Dir/Plans, Jul-Dec 1953, pp 162-63.

13. Hist (TS), Dir/Plans, Jul-Dec 1955, pp 96-98; Goldberg, Hist. of USAF, p 158; Futrell, pp 751-57, 760-65.

14. Hist (TS), Dir/Plans, Jul-Dec 57, pp 146-47; Huntington, pp 106-108.

15. Hist (TS), Dir/Plans, Jan-Jun 1955, pp 55-57; Jul-Dec 1955, pp 99-100; Futrell, pp 751-57, 760-65; Huntington, p 104.

16. Hist (TS), Dir/Plans, Jan-Jun 1955, pp 55-57; Jul-Dec 57, pp 146-47; Bowen & Little, IV, pp 581-82.

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Chapter II

1. Bowen & Little, IV, pp 372-73.
2. Ibid., pp 152, 235-36.
3. Ibid., p 174.
4. Huntington, pp 300-301; In the Matter of J. Robert Oppenheimer (Wash., D.C., 1954), pp 242-43; Hist (TS), Dir/Plans, Jul-Dec 1953, pp 40-41.
5. Bowen & Little, IV, pp 297-99, 336.
6. Ibid., III, pp 359-61.
7. Ibid., IV, pp 39-41, 481-83.
8. Ibid., IV, pp 486-87; Arthur K. Marmor, The Search for New USAF Weapons (S) (AFCHO, 1961), pp 19-21; Hist (TS), Dir/Plans, Jul-Dec 1958, pp 11-14.
9. Lemmer, Concept of Deterrence, pp 45-47; Bowen & Little, IV, pp 71-72.
10. Bowen & Little, IV, 101, 125-26, 377-78, 392-93, 400, 440-42, 521-25.
11. Hist (TS), Dir/Plans, Jul-Dec 1951, pp 98-99; Jan-Jun 1953, pp 43-44, 69-71; Jul-Dec 1956, pp 114-116; Futrell, 520-22; Bowen & Little, III, pp 170-74; IV, pp 460-61, 521-25.
12. Goldberg; History of USAF, pp 122-24, 208; Bowen & Little, III, pp 116-118; IV, p 221-23.
13. Goldberg, History of USAF, pp 124-25, 191-93.
14. Ibid.; Hist (TS), Dir/Plans, Jul-Dec 1951, pp 98-99; Jan-Jun 1952, p 83; Bowen & Little, IV, p 428.
15. Hist (TS), Dir/Plans, Jul-Dec 1952, pp 75-76, 83; Goldberg, History of USAF, p 125; Bowen & Little, III, pp 170-74, 181-84.
16. Goldberg, Hist. of USAF, p 125; Bowen & Little, IV, pp 521-25.
17. Max Rosenberg, Plans and Policies for the Ballistic Missile Initial Operational Capability Program (S), (AFCHO,1960) pp 5-13, 63-73; Rosenberg, USAF Ballistic Missiles, 1958-1959 (S),(AFCHO,1960), pp 1-6, 11-17, 19-26, 31-40; Jacob Van Staaveren, USAF Intercontinental Ballistic Missiles, 1960-61 (S), (AFCHO,1964), pp 1-7, 25-40, 58-62; Bowen & Little, IV, pp 552-53, 569-70, 581-82.

Chapter III

1. Huntington, pp 373-74, 409-410; Bowen & Little, IV, pp 437-42; Hist (TS), Dir/Plans, Jul-Dec 1951, 110-111; Jul-Dec 1954, pp 8-11, 99-100; Jan-Jun 1955,

pp 16-17; Air Force Objective Series (AFOS) 2/1, "Length of the Decisive Phase of Nuclear War," (S) 20 Aug 1959; AFOS 2/5, "Long Range Concept of Nature of Future War," 14 Mar 1960.

2. Hist (TS), Dir/Plans, Jul-Dec 1951, pp 110-111; Jan-Jun 1952, pp 76-77; Jan-Jun 1953, pp 24-25; Jul-Dec 1954, pp 8-11.

3. Bowen & Little, III, pp 146-150.

4. Hist (TS), Dir/Plans, Jan-Jun 1952, pp 119-20; Jul-Dec 1952, pp 84-87; Futrell, pp 659-67.

5. Senate Hearings before Subcommittee on Approp, 83d Cong, 1st Sess, DOD Appropriations for 1954, pt 1, pp 224-32.

6. Memo (TS), DCS/Plans to DCS/D et al, 22 Oct 53, subj: AF Policy, w. encl, quoted in Bowen & Little, III, pp 99-100.

7. Hist (TS), Dir/Plans, Jul-Dec 1954, pp 3-7.

8. Hist (TS), Dir/Plans, Jul-Dec 1953, pp 11-13, 71-72; Bowen & Little, IV, pp 432-33, 372-73.

9. Huntington, 373-74.

10. Bowen & Little, IV, pp 39-41, 174, 184-85, 437-38, 440-42, 432-33; Hist (TS), Dir/Plans, Jul-Dec 1951, pp 110-111; Jan-Jun 1952, p 76, 119-20; Jul-Dec 1952, pp 84-87; Huntington, pp 418-19.

11. Hist (TS), Dir/Plans, Jul-Dec 1952, pp 84-87; Jan-Jun 1953, pp 55-56; Futrell, pp 654-56.

12. Memo (TS), Maj Gen Richard C. Lindsay, Dir/Plans, to Col Elvin S. Ligon, Jr., Dir/Ops, 23 Jun 1954, subj: Air Force Program Study, 1957-65, in Hist (TS), Dir/Plans, Jan-Jun 1954 (App 2); Hist (TS), Dir/Plans, Jul-Dec 1954, pp 2-11, 99-102; Jan-Jun 1955, pp 16-17.

13. Hist (TS), Dir/Plans, Jan-Jun 1956, pp 44-46.

14. Hist (TS), Dir/Plans, Jan-Jun 1957, pp 118-119; Maxwell D. Taylor, The Uncertain Trumpet (N.Y., 1960), pp 26-29, 130-64, passim; House Hearing before Subcmte on Approp, 86th Cong, 1st Sess, DOD Appropriations for 1960, pt 1, pp 254, 330-39, 591-594.

15. Hist (TS), Dir/Plans, Jul-Dec 1959, p 74.

16. Hist (TS), Dir/Plans, Jul-Dec 1957, p 86; Jul-Dec 1958, pp 16, 30-33; Jul-Dec 1960, pp 57-58; Futrell, pp 710-22.

17. Huntington, pp 288-89; Futrell, pp 710-22; Taylor, pp 26-29, 55-66, 130-64, passim; William M. Kaufmann, ed., Military Policy and National Security (Princeton, N. J., 1956) Chap 1&2.

18. Huntington, as cited above; Taylor, as cited above; Hist (TS), Dir/Plans, Jan-Jun 1957, p 10; Semiannual Report of the SOD, Jan 1 to Jun 30, 1955, pp 215-16; Ibid., Jan 1 to Jun 30, 1956, pp 257-59; Ibid., Jan 1 to Jun 30, 1957, pp 291-97.

Chapter IV

1. Huntington, pp 64-66; Futrell, pp 637-40.

2. Huntington, 239-40; Bowen & Little, III, pp 95-96; IV, pp 451-55; Kenneth R. Whiting, Soviet Reaction to Change in American Military Strategy (AU, 1965), pp 1-15; Whiting, The Development of the Soviet Armed Forces, 1917-1966 (AU, 1966), Chps 7 & 8.

3. Futrell, pp 642-46; Hist (TS), Dir/Plans, Jan-Jun 1953, pp 123-24; Jul-Dec 1953, pp 11-12.

4. Futrell, pp 648-49.

5. Ibid.; Finletter, Power and Policy, pp 240-45.

6. Hist (TS), Dir/Plans, Jul-Dec 1955, pp 145-46; Futrell, pp 705-710.

7. Hist (TS), Dir/Plans, Jan-Jun 1956, pp 3-5, 83.

8. Hist (TS), Dir/Plans, Jan-Jun 1957, pp 9-10; Jul-Dec 1957, p 86.

9. Huntington, pp 200-207; Futrell, pp 705-710; Taylor, pp 51-52.

10. Rprt by President's Air Policy Commission, Survival in the Air Age (Washington, 1948) p 12; Lemmer, Concept of Deterrence, 1945-1950, p 17; Nathan F. Twining, Neither Liberty nor Safety: A Hard Look At U.S. Military Policy and Strategy (N.Y., 1966) p 18-20; intvw with Gen. Nathan F. Twining, Nov 1965, by Arthur K. Marmor, copy in AFCHO files; Hist(TS), Dir/Plans, Jan-Jun 1955, pp 4-5.

11. Huntington, 83-85; Futrell, pp 633-34; Dwight D. Eisenhower, Mandate for Change, 1953-1956 (N.Y., 1963) pp 95-96, 178.

12. Eisenhower, pp 178-90, passim, 449-58.

13. Hist (TS), Dir/Plans, Jan-Jun 1953, p 29; Jul-Dec 1953, pp 160-62; Jul-Dec 1954, p 97; Jan-Jun 1955, pp 45-46; Futrell, pp 609-612; intvw with Dr. Alfred Goldberg, RAND Corp, 13 May 1966.

14. N.Y. Times, 24 Jan 1954, 28 Feb 1954; Futrell, pp 649-52; Huntington, pp 83-85.

15. Thomas D. White, "The Current Concept of American Military Strength", Air University Quarterly Review (Spring 1954) pp 3-4, 8-9; "Some Reflections on the New Look", Air Force (Apr 1954) p 26; Dale O. Smith, U.S. Military Doctrine: A Study and Appraisal (N.Y., 1955) pp 174-76; Futrell, pp 657-59; intvw with Twining, Nov 1965.

16. Futrell, pp 649-54; Huntington, pp 83-85; Kaufmann, Military Policy and National Security (Princeton,1956) Chap 1&2.

17. Futrell, pp 649-54, 657-59.

18. Rosenberg, Plans and Policies for Ballistic Missile IOC, pp 5-13; Bowen & Little, IV, pp 552-53.

19. Bowen & Little, IV, pp 581-82, 569-70; Rosenberg, as cited above, and USAF Ballistic Missiles, 1958-1959, pp 1-6, 11-17; AF Pamphlet 190-2-1, Releasable Data on USAF Aerospace Craft, Dept of Air Force, (Wash., D.C., Jun 1960).

20. Futrell, pp 723, 744-57, 760-65; Bowen & Little, IV, pp 569-73; Rosenberg, as cited above; Annual Reports of SOD, 1955-1960, especially Air Force sections.

21. Bowen & Little, III, pp 128-29; Futrell, pp 776-77, 785-87; Hist (TS), Dir/Plans, Jul-Dec 1955, pp 8-9; Jan-Jun 1957, pp 7-8, 161; Jul-Dec 1957, pp 117-20.

22. Futrell, pp 776-77, 782-83, 792-97.

23. Futrell, pp 893-95; Hist (TS), Dir/Plans, Jan-Jun 1959, pp 36-38; Jul-Dec 1959, pp 61-62; Jan-Jun 1960, pp 81-82; Jul-Dec 1960, pp 18-20, 103-104.

24. Hist (TS), Dir/Plans, Jan-Jun 1957, pp 162-63; Jul-Dec 1957, p 120; Jan-Jun 1958, pp 18-19, 31-35; Jan-Jun 1959, pp 48-49; Jul-Dec 1959, pp 70-71; Annual Report of SOD, Jan 1 to Jun 30, 1958, p 284; Jul 1, 1958 to Jun 30, 1959, p 294; Jul 1, 1959 to Jun 30, 1960, pp 322-23.

25. Annual Report of SOD, Jul 1, 1959 to Jun 30, 1960, pp 24, 90, 360-61; Hist (TS), Dir/Plans, Jul-Dec 1958, pp 89-90; Jan-Jun 1959, pp 51-52; Jan-Jun 1960, p 105; Jul-Dec 1960, pp 34-36.

26. Lee Bowen, The Threshold of Space: The Air Force in the National Space Program, 1945-1959 (AFCHO,1960) pp 1-2, 34-37, 43-48; Bowen, (C) An Air Force History of Space Activities, 1945-1959(C), (AFCHO, 1964), pp 57-58, 66-77, 82-98, 145-61, 162-80; History of the United States Air Force, ATC Pamphlet 190-1 (Jun 1961), pp 21-15, 21-17.

27. Futrell, pp 857-61.

28. Ibid., pp 903-904; Hist (TS), Dir/Plans, Jan-Jun 1954, pp 71-72; Jul-Dec 1956, pp 243-44; Jul-Dec 1960, pp 23-27, 36-37; Annual Report of SOD, Fiscal Year 1964, pp 28, 286.

29. Futrell, pp 436-38; Goldberg, History of U.S. Air Force, pp 129-32, 133-36.

30. Goldberg, as cited above; Futrell, pp 510-16.

31. Goldberg, pp 136-37.

32. Annual Report of SOD, Jul 1, 1959 to Jun 30, 1960, pp 326-27; Annual Report of SOD for Fiscal Year 1961, p 293; Bowen & Little, III, pp 228-33; Futrell, pp 826-31.

33. Futrell, pp 769-71, 826-31, 838-41.

34. Hist (TS), Dir/Plans, Jul-Dec 1958, pp 9-10; Jul-Dec 1959, pp 64-66; Jul-Dec 1960, pp 66-67; Futrell, 838-41.

Chapter V

1. Bowen & Little, IV, pp 580-82; Whiting, Development of Soviet Armed Forces, pp 78-83; Whiting, Soviet Reactions, pp 8-14.

2. Huntington, pp 101-103.

3. Futrell, pp 677-84; Goldberg, "Military Origins of the British Nuclear Deterrent", International Affairs, (Oct 1964) p 602; Air Force (May 1954), pp 25-26, 48; Semiannual Report of SOD, Jan 1 to Jun 30, 1955, pp 215-16; Charles V. Murphy, "The Atom and the Balance of Power", Fortune (Aug 1953).

4. Futrell, pp 677-84; "Defense Through Deterrence", Air Force (Apr 1955) pp 33, 37-38; House Hearings before Subcmte on Approp, DOD Appropriations for 1958, 85th Cong, 1st Sess, pt 1, p 930; DOD Appropriations for 1961, 86th Cong, 2d Sess, pt 2, p 232; Twining, pp 89-90, 93-95; Hist (TS), Dir/Plans, Jan-Jun 1957, p10.

5. Futrell, p 437, 459-62, 503-504, 659-67; Air Force (Nov 1954) p 68; Air Force (Feb 1955) pp 25-29, 46, 51-52, 82.

6. Hist (TS), Dir/Plans, Jan-Jun 1951, pp 11-12, 16; Jul-Dec 51, pp 104-105; Jan-Jun 1953, pp 70-71; Bowen & Little, III, 139-43; Futrell, 478-79.

7. Futrell, pp 659-67; Finletter, Power and Policy, pp 52-57.

8. Hist (TS), Dir/Plans, Jan-Jun 1955, pp 44-45; Jul-Dec 1958, pp 78-79; Jul-Dec 1960, pp 112-113; AFOS 2/11 (C), 9 Sep 1960, "USAF Views on the Concept of Deterrence."

9. Futrell, pp 967-70; Air Force (Dec 1960) p 49; Lt. Col. Donald F. Martin, "Effective Aerospace Power: Counterforce"; Air University Quarterly Review (Winter & Spring 1960-61) pp 152-58.

10. Futrell, pp 659-67, 931-35, 952-61; intvw with Dr. Alfred Goldberg, 13 May 1966; see also, AFOS 2/5 (C), 14 Mar 1960, "Long-range Concept of the Nature of Future Wars and Relationships between General, Limited, and Cold War"; Hist (TS), Dir/Plans, Jan-Jun 1958, p 73.

11. Taylor, The Uncertain Trumpet, pp 59-66, 130-64, passim; House Hearings, DOD Appropriations for 1960, 86th Cong, 1st Sess, pt 2, pp 97-101, 297-300, 317-18; William W. Kaufmann, "The Crisis in Military Affairs", World Politics (Jul 1958) pp 579-603; Futrell, 927-31, 948-61, 962-69; Huntington, pp 101-103.

12. Hist (TS), Dir/Plans, Jul-Dec 1958, pp 72-74; Jan-Jun 1959, pp 53-55.

13. House Hearings as cited in note 11; Taylor, as cited in note 11; Futrell, pp 948-61.

14. Futrell, as cited above; Cmdr P.H. Backus, "Finite Deterrence, Controlled Retaliation", U.S. Naval Institute Proceedings (Mar 1959) pp 23-29.

15. Futrell, pp 927-31, 956-61.

16. Ibid., 956-61 ; Twining, 90-94; intvw with Twining, Nov 1965; AFOS 2/5 (C); AFOS 2/11 (C), 9 Sep 1960, "USAF Views on the Concept of Deterrence"; Martin, "Effective Aerospace Power; Counterforce", as cited in note 9; Brig Gen Robert C. Richardson III, "The Fallacy of Minimum Deterrence", Air University Quarterly Review (Spring 1960) pp 109-117.

17. Huntington, pp 105-106, 342-43, 352-53; Taylor, pp 26-27; Futrell, pp 941-47; Gen Frederic H. Smith, Jr., "Nuclear Weapons and Limited War", Air University Quarterly Review (Spring 1960) pp 3-27; Alfred Goldberg, Strategy and Money (AFCHO,1963) pp 1-10, 43-48.

18. Smith, as cited above; Futrell, pp 710-22; Huntington, pp 105-106; Taylor, pp 26-27, 55-57, 64-65.

19. House Hearings before Subcmte on Approp, 84th Cong, 2d Sess, DOD Appropriations for 1957, pp 431, 436-46, 476, 433; Hearings before Subcmte on Air Force of Cmte on Armed Services, U.S. Senate, Study of Air Power, 84th Cong, 2d Sess, pt 9, pp 704-705, 740-41; Futrell, pp 695-703, 942-48; William W. Kaufmann, Military Policy and National Security, Chaps 1 & 2, passim.

20. Futrell, pp 710-22, 941-47; Twining, pp 102-115; intvw with Twining, Nov 1965.

21. Futrell, pp 691-94; Hist (TS), Dir/Plans, Jul-Dec 1955, p 138; Jul-Dec 1958, pp 30-31; Brig Gen Henry P. Viccellio, "Composite Air Strike Force", Air University Quarterly Review (Winter 1956-57) pp 27-38; Bowen & Little, III, pp 170-74; Huntington, pp 406-407.

22. Futrell, pp 673-77, 691-94, 710-22; Huntington, pp 406-407; Hist (TS), Dir/Plans, Jan-Jun 1955, p 5; Jul-Dec 1955, p 133; Finletter, pp 54-55, 202-211.

23. Futrell, pp 673-77, 816-18; Hist (TS), Dir/Plans, Jul-Dec 1956, pp 60-65; Jan-Jun 1957, pp 132-35, 142; Hist (S), TAC, Jul-Dec 1963, pp 293-94; George F. Lemmer, Strengthening USAF General Purpose Forces, 1961-1964 (TS), (AFCHO,1966) pp 1-2; Gen Otto P. Weyland, "The Role of Tactical Air in the Long Pull", Air Force (May 1956) pp 52-55; intvw with Gen Thomas D. White, 27 Jun 1961, by Joseph W. Angell, Jr., and Alfred Goldberg, copy in AFCHO files.

24. Huntington, pp 105-106; Hist (TS), Dir/Plans, Jan-Jun 1957, pp 16-19; Jan-Jun 1959, pp 5-7; Jacob Van Staaveren, Air Operations in the Taiwan Crisis of 1958 (S), (AFCHO, 1962), pp 28-32, 51-58; Futrell, pp 941-47; Smith, "Nuclear Weapons and Limited War", pp 3-27.

25. Futrell, pp 962-70; intvw with Gen White, as cited in note 23; Author's intvw with Alfred Goldberg, 13 May 1966; Huntington, pp 406-407.

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GLOSSARY

ADC	Air Defense Command
Adm	Admiral
AEC	Atomic Energy Commission
AF	Air Force
AFCHO	USAF Historical Division Liaison Office
AFOS	Air Force Objective Series
Approp	Appropriation
ARDC	Air Research and Development Command
ARPA	Advanced Research Projects Agency
ATC	Air Training Command
AU	Air University
BMD	Ballistic Missile Division
BMEWS	Ballistic Missile Early Warning System
Brig Gen	Brigadier General
CASF	Composite Air Strike Force
Cmte	Committee
CONAD	Continental Air Defense Command
C/S	Chief of Staff
DCS	Deputy Chief of Staff
DCS/D	Deputy Chief of Staff, Development
DEW	Distant Early Warning
DOD	Department of Defense
Dir/Ops	Directorate (Director) of Operations
Dir/Plans	Directorate (Director) of Plans
GAM	Guided Aircraft Missile
HE	High Explosive
ICBM	Intercontinental Ballistic Missile
ICIS	Interdepartmental Committee on Internal Security
IGY	International Geophysical Year
IOC	Initial Operational Capability
IRBM	Intermediate Range Ballistic Missile
JCS	Joint Chiefs of Staff
JIC	Joint Intelligence Committee
JLPC	Joint Logistics Plans Committee
JSCP	Joint Strategic Capabilities Plan
JSOP	Joint Strategic Objectives Plan
JSSC	Joint Strategic Survey Committee
JSTPS	Joint Strategic Target Planning Staff

KT	Kiloton (Explosive power of 1, 000 tons of TNT)
LABS	Low Altitude Bombing System
Lt Gen	Lieutenant General
Maj Gen	Major General
MIT	Massachusetts Institute of Technology
MS.S	Manuscript
MT	Megaton (Explosive power of 1, 000, 000 tons of TNT)
NACA	National Advisory Committee for Aeronautics
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NORAD	North American Air Defense Command
NSC	National Security Council
NSRB	National Security Resources Board
OSD	Office of the Secretary of Defense
RAF	Royal Air Force
R & D	Research and Development
Rprt	Report
SAC	Strategic Air Command
SAGE	Semiautomatic Ground Environment
SEATO	Southeast Asia Treaty Organization
Sess	Session
SIOP	Single Integrated Operational Plan
SOD	Secretary of Defense
SM	Strategic Missile
STRAC	Strategic Army Corps
Subcmte	Subcommittee
TAC	Tactical Air Command
TN	Thermonuclear
U.K.	United Kingdom
USAF	United States Air Force
USSR	Union of Soviet Socialist Republics
WDD	Western Development Division
WSEG	Weapons Systems Evaluation Group

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